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TEACHERS' MANUAL

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PRIMARY GRADES

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A manual of discip-
line and instruction
for...teachers of
the primary schools

Southern Branch
of the
University of California
Los Angeles

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STATE NORMAL SCHOOL
Los Angeles Cal.

891 STATE NORMAL SCHOOL,
Los Angeles, Cal.

A MANUAL

OF

DISCIPLINE AND INSTRUCTION

FOR THE

USE OF THE TEACHERS

OF THE

PRIMARY SCHOOLS

UNDER THE CHARGE OF THE

BOARD OF EDUCATION OF THE CITY OF NEW YORK

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TEACHERS' MANUAL.

The following brief extracts from the Records of the Board of Education show the circumstances and authority under which this Manual of Instruction was prepared:

JOURNAL OF THE BOARD OF EDUCATION FOR 1882, page 693: "*Resolved*, That the Teachers' Manual be referred to the Committee on Course of Study and School Books, for such revision as may be necessary, and report thereon to this Board."

JOURNAL OF THE BOARD OF EDUCATION FOR 1882, pages 790 and 845: "*First*, That the Teachers' Manual be revised, and its provisions be made to conform to the present Course of Study. That the methods of instruction recommended in said Manual shall be suggestive only, but that in respect to other matter, when so stated therein, said Manual shall have the same force and effect as a by-law of the Board."

By the authority of the Board and the Committee on Course of Study and School Books, John Jasper, City Superintendent of Schools, and his Assistants, have prepared the Manual herewith presented.

WILLIAM WOOD,
GILBERT H. CRAWFORD,
FERDINAND TRAUD,
J. EDWARD SIMMONS,
EDWARD PATTERSON,
Committee on Course of Study and School Books.

STEPHEN A. WALKER,
President.

LAW. D. KIERNAN,
Clerk.

TEACHERS' MANUAL

FOR THE

PRIMARY SCHOOLS

OF

NEW YORK CITY.

INTRODUCTION.

Object of this Manual.—The object of this manual is to furnish teachers with the *Course of Instruction* prescribed for the Primary Schools, and with instructions and suggestions to aid in carrying out this course in all its requirements; also, with the by-laws, rules, and regulations which relate to the duties of teachers.

☞ The Course of Studies and the by-laws and regulations contained herein are valid requirements for the government of teachers in the discharge of their duties. As to the suggestions in relation to methods of teaching given herewith, although they embody the results of the long and wide experience of many successful teachers, and although their proper use has uniformly led to desired ends in instruction, the teacher will be at liberty to receive and to use them as the counsel of a trusted friend, and to make the modifications necessary to meet the particular condi-

tions of the pupils under instruction; but she will be held responsible for the use of such methods as will lead pupils to the attainment of proper results in their education. The true education of children is not dependent upon the use of any particular method. Methods of education are valuable only when they harmonize with the conditions under which the mind attains knowledge.

☞ Teachers are counselled to study carefully the suggestions given in relation to each subject of instruction, and to consider the principles that underlie and direct the methods, in order wisely to modify these methods when circumstances render it desirable to do so. *In education principles are like fixed laws: true methods of teaching are only ways of obeying and carrying out those laws.*

Duties of the Teacher.—No task can be more responsible or require the exercise of greater care than that of educating the young. To perform it properly, special preparation and study are indispensably necessary, not only in relation to the branches of knowledge which may have been selected as a basis for the instruction, but in regard to the proper methods and appliances to be employed, in order to render the instruction truly effective. These methods must be determined by a consideration of the faculties to be trained and educated, as well as the nature of the subject taught.

To a great extent, experience must be our guide in enabling us to judge of the character of the minds to be educated, as well as to determine the means to be employed for carrying on the work.

The teacher's task is one of great magnitude, responsibility, and labor. Great issues depend upon its right performance. The future welfare of the community depends upon her efforts. Neglect on her part—nay, conscious in-

efficiency—is a crime. The impressions which are made by her are ineffaceable. Hence it is of supreme importance that her work receive all the guidance that careful study and mature experience can afford.

The natural education of each child is begun before he enters school, by means of his personal experience with the objects and phenomena that surround him. Knowledge is the result of experience. Every teacher should aim to continue the natural processes of education by extending the personal experience of the pupils, so that the range of objects and phenomena observed by them shall be daily increased. To produce this result the teacher must select suitable materials for a proper exercise of the child's senses; then stimulate the pupil's mind to work upon them.

It is the teacher's duty to adjust the conditions between the child's mind and the objects, so that the natural exercise of the senses shall develop mental power and produce intellectual growth. The teacher's work should cause the child to notice more and more carefully his personal experiences with surrounding objects, and thereby lead to the formation of habits of observation. It is the teacher's duty to arrange the materials to which the pupils should give special attention, so as to guide their observations in a manner that will lead to a proper association of their experiences.

Knowledge consists in ideas and facts gained and properly classified by the learner. Words memorized and recited about an object, even though their arrangement be faultless, do not by themselves constitute knowledge. The child cannot be a real learner while only a passive recipient of words. Real education comes from what the child does. To effect mental development, there must be activ-

ity of the mind in connection with the object just as truly as there must be activity of the body to promote physical development. The teacher should act in accordance with these facts in the application of all methods of instruction.

In no other period of education does the importance of a proper attention to the laws of mental development rest so heavily upon the teacher as it does during the first three years of the child's school life. During this period, especially, should instruction commence with perceptions —perceptions of form, color, sounds, number, size, qualities ; of right and wrong actions, obedience, etc. ; and the appropriate words and language should be taught to enable the child to express the ideas obtained by means of these different perceptions.

Ideas are obtained in different ways. Some can be gained only through the sense of sight, as *color ;* some only through the sense of touch, as *rough*, *smooth*, *soft*, *hard*, *hot*, *cold ;* some only through the sense of smell, as *odors ;* some only through the sense of taste, as *sweet*, *sour*, *bitter*, *pungent*, *astringent ;* some only through the sense of hearing, as *spoken words*, *music*. Of some objects ideas may be gained through several of the senses, as the shape of an orange by the sense of sight and of touch ; its color by sight ; its odor by smell ; and other properties by taste. The ease and accuracy with which ideas may be obtained in these different ways depend upon the degree of development which these several senses have attained. The senses are the gateways through which the mind holds intercourse with the world around it ; and if these be but partly opened, or if freedom of communication be obstructed by neglecting the use of the proper means for such intercourse, the ideas obtained must be correspondingly dwarfed and imperfect.

It is a well-known fact that the proper exercise of any power, whether physical or mental, increases that power. Exercise of the several senses is therefore the true means by which the power of gaining ideas may be strengthened, and the ability to acquire knowledge increased.

It is also a well-known fact to all observing teachers that a large proportion of young children, when they first enter school, have not learned to use their senses in such a manner as to enable them to gain accurate ideas. It therefore becomes a matter of great importance that teachers of young children should give special attention to providing suitable exercises for this purpose.

GOVERNMENT AND DISCIPLINE.

INSTRUCTIONS FOR ALL THE GRADES.

True Objects of Discipline.—The training of pupils so that they shall *form right habits and learn self-control*, is the true object of discipline. In all the rules and methods of discipline employed, this purpose should be kept steadily in view. Discipline, in its relation to order, exists for the sake of the pupils and the school. It prepares the way for the work of instruction, and makes it effective. Obedience is the first condition in discipline. It includes conformity to requirements as to time, place, and manner, such as punctuality, regularity, orderly habits, and so forth.

"Like Begets Like."—"As is the teacher, so will be the school." It is, therefore, requisite that teachers should possess fixed habits of neatness, cleanliness, and order; gentleness of manner, a watchful self-control, and a cheerful spirit. In speaking let pleasant tones of voice prevail; then the words of reproof will be more impressive and effectual.

Teachers should never forget that their pupils are constantly and closely watching their conduct, and are prone to imitate whatever they observe. Scholars should, therefore, see and hear nothing that they may not safely imitate. There is an "unconscious tuition," the silent influence of which produces the most permanent effects.

Sympathy for Children.—Teachers should seek to ob-

tain the sympathetic regard of the children by giving a due attention to their wants and requests. These should be fulfilled as far as it is proper and reasonable. Children are quick to perceive and to resent injury or injustice. The child who asks for the privilege of a drink of water, for instance, may be suffering acutely; and, if not accorded relief when this seems to be perfectly practicable on the part of the teacher, may feel a sense of outrage which, for a time, if not permanently, would impair its respect and regard for the teacher. The cultivation of a due feeling of *sympathy* for the children will wholly prevent this. The possession of this feeling in its fulness is the best foundation of success in both discipline and instruction. Kindness is the practical basis of *sympathy*. It seeks the good of the pupil and endeavors to remove all imperfections of the individual without injury to him. Its influence for good is exceedingly strong, and its power with children nearly irresistible.

Encourage Pupils. — *Encouragement* inspires confidence. Children, more than others, need *encouragement*. It is a strong incentive to effort. Let it be given in all cases where this can be honestly done. To a want of this, in the discipline of classes, are to be ascribed the timidity and reserve often manifested among pupils by a hesitating manner and a low voice. A proper degree of encouragement will render them confident and spirited, eager to tell what they know, and in an audible tone of voice. Encouragement has a peculiar influence in promoting mental and moral improvement. Letting a boy know that you believe there is good in him is the best way for putting it there.

Develop Right Opinions.—Aim to govern the class by a development of public opinion among the pupils in favor

of the right and against the wrong, and thus govern individual members through the class. Give proper attention to those cases of disorder by single pupils which cannot be overcome through influence upon the class. Success in discipline does not lie in telling individual pupils their faults before the class. Attempts to detect and correct each individual misdeed in detail will not develop the right public opinion nor lead the pupils to a willing compliance with the wishes of the teacher. Judicious commendation when pupils make efforts to overcome faults is more effective toward accomplishing the desired results.

Avoid Scolding.—*Harsh tones* are unnecessary and improper. Words of disapprobation may be uttered by the teacher in a tone of *decision*, without the use of any severity that would imply resentment, anger, or antipathy on the part of the teacher. On the contrary, the language used and the tones of the voice should always express a feeling of *sympathy* with the child. This is the way to win the youthful mind, and to bend the will through the affections; a different course will antagonize it and prevent all real submission, securing only a temporary semblance of obedience. *Never threaten.* Harsh words, rough means, and appeals to corporal punishment, when employed to secure school order and certain results of study, break down the sense of honor and destroy in the pupil the proper respect for his teacher.

Attention the Basis of Good Order.—*Good order* does not require pupils to occupy, for a long time, a fixed position; nor to assume a constrained posture; nor to fix their eyes upon a given point; nor to be as motionless as statues. All this is unnatural, and much of it positively injurious, and whatever is unnatural is not good order. The postures of the pupil should be graceful, easy, and

uniform, and should be frequently changed. The movements, while as simultaneous as perfect attention would necessarily produce, should also be easy and natural.

☞ *Intelligent attention, prompt and willing obedience, with quiet, orderly movements, are the chief requisites of good order.*

Physical Education. — No system of education and school management is complete which neglects to provide for due attention to physical training. Children should be taught how to sit, to stand, to move, to walk; to abstain from the use of those things, and to avoid the doing of those acts which are injurious to health. Regulations and instructions in relation to this matter should be simple, and due attention should be given to them at every appropriate opportunity during the daily exercises of the school.

Cleanliness of person and of clothing; the importance of breathing pure air, of eating proper food, of caring properly for the eyes, the teeth, and the ears; and the necessity for daily physical exercise, should receive special attention, and be made subjects of instruction and admonition.

In the matter of proper postures, movements, etc., it is quite easy to enforce all necessary regulations, provided they are not capriciously applied. Children must first be taught them, and then *never* permitted to violate them without admonition or correction.

Due attention should be given daily to calisthenics and such other exercises as will aid the physical organs to perform their functions properly, and thereby to prepare the mind for efficient activity.

Neatness, Regularity. — Neatness, method, and regularity are among the necessary elements of popular educa-

tion. The character of children is greatly affected by their surroundings. These should, therefore, be neat and orderly. The rooms in which they assemble should be clean, the desks and other furniture, as far as possible, free from injury or defacement, everything giving evidence of constant attention. Children thus unconsciously acquire habits of order, neatness, and regularity, which have an important bearing upon their usefulness and happiness in after life.

To impart or maintain these habits, every proper means should be employed, and every requisite rule should be carefully and regularly enforced.

Moral Education.—No teacher who neglects the moral training of the pupils in the essential elements of good character does the whole duty of the instructor. The main object in moral training, as in physical and intellectual education, is to give a right direction to the action of those powers that relate to this department of our nature. Such training, to be effective, must provide suitable means for the exercise of the moral powers. It consists, largely, in leading the children to understand *their duties to themselves* and *their duties toward others.* Among their duties to themselves are: *self-control* in all matters relating to conduct—of the temper, the appetite, and the desires; speaking the truth; and self-culture in all things that aid in forming a good character. Among their duties to others are: obedience to parents and teachers; kindness to brothers, sisters, and playmates; and the practical observance of the Golden Rule. That teacher who kindly respects the rights of the pupils, and daily illustrates the great virtue—*kindness*—in the management of pupils, and in personal conduct elsewhere, will accomplish practical results in moral education which cannot

be attained by rules or lectures. A spirit of true kindness pervading a school will become a fountain of virtues.

Children do not comprehend virtue in the abstract; but they soon learn to understand it when they see it in the actions of their teachers and parents and of others around them. Let the teacher utilize the reading and other lessons, as well as school incidents, in leading the children to admire honesty, truth-speaking, unselfishness, true courage, and all right-doing, and thus sift in and mingle the moral with the mental, as Nature does in her teaching.

Lead children to discuss the character of actions described in stories, reading lessons, etc., and thus aim to develop in them the ability to discriminate justly between the right and the wrong in their own conduct.

Social relations, the dependence of each individual upon his neighbor, the necessity of labor, the benefits of society and government, should be illustrated and taught by means of easy and familiar lessons suited to the age and capacity of the children. As the development of the moral nature is of greater importance to the welfare of the individual and the community than any other part of education, no opportunity should be omitted for training children in such habits as will cause them to grow up truthful, honest, self-governing, and law-abiding citizens.

Modes of Punishment.—Every punishment should be adapted to the offence. As a general principle, if pupils abuse a privilege, punish by depriving them of that privilege for a while. If injury be done to that which belongs to another, require a satisfactory reparation. *School work should never be given as a punishment.*

Firmness, vigilance, and uniformity in dealing with children are of the first importance. The teacher should never resort to violent means, such as pushing, pulling, or

shaking the children, in order to obtain their attention. All such practices constitute a kind of corporal punishment which, in all its forms, is specially prohibited by the Board.

Modes of punishment painful to the corporeal system, such as the sustaining of wearisome burdens, unnatural and long-continued attitudes of restraint, standing, kneeling, etc., are wrongful and injurious. Equally so is the confining of delinquents by tying them or by shutting them in closets. These are all a resort to mere physical force, instead of moral incentives, and involve no appeal to a sense of honor or duty in the child. They do not properly assert the *authority* of the teacher, nor do they really produce *obedience* on the part of the pupil.

In directing the various movements required of the pupils, care should be taken never *to touch them.* The teacher should take such a position before the class as will command the eye of every pupil, and thence direct by the voice, or by a signal. Pupils must be habituated to the impression that the teacher will give the commands but *once*, and that they must be obeyed instantly.

Public exposures and badges of disgrace belong to a class of punishments which, if ever resorted to, should be employed under careful limitations, and with great circumspection and prudence; for it requires a skilful, discreet, and conscientious teacher to use them safely and with advantage. In the discipline of girls such methods should be avoided altogether, as destructive of that nice sense of shame and that delicate sensibility to reputation which should be carefully fostered in the female character. Avoid the use of ridicule; it is a dangerous remedy, and tends to the loss of self-respect in the pupil.

Summary of Important Points.—The following is a

brief summary of the practically important points in moral education, and in the training in morals and manners:

That intellectual training, however excellent, is not enough:

That public schools are instituted to make not only *intelligent* but *good citizens:*

That morals and manners are best taught *incidentally*, not formally; by personal example and anecdote, not by mere lecture:

That "unconscious tuition" by the force of the teacher's example, is a most powerful influence for good or for evil; and that this includes habits of personal cleanliness, tidiness, the avoidance of lounging in sitting or standing, etc.; punctuality, promptness, earnestness in the right, respect for the rights and feelings of pupils and others; the use of kind tones, and a kind manner; private admonition of the erring; the avoidance of all coarse and low expressions and of every form of petty tyranny.

Among the many points upon which opportunity for incidental instruction should be sought, are the following:

Respect for parents and teachers, and for the aged; kindness to the infirm; the avoidance of cruelty; abhorrence of brutality, including pugilism; courtesy and politeness; true, and false courage; bravery and foolhardiness; moral courage and decision as indispensable to a noble character; truthfulness, and the meanness of lying; the degradation involved in habits of profanity, indecency, and intemperance; the avoidance of bad books, bad papers, and bad companions; the indispensable virtue of patriotism; and, generally, to do and to be *right* because it *is* right, and not for fear of punishment, discovery, or disgrace.

COURSE OF INSTRUCTION

PRESCRIBED FOR

PRIMARY SCHOOLS,

WITH

DIRECTIONS AND SUGGESTIONS TO TEACHERS.

SIXTH GRADE.

Outline Course.

Language Lessons.—*Reading*—familiar words, phrases, and simple sentences from blackboard, chart, etc.: *spelling*—familiar words from dictation: exercises in *elementary sounds:* lessons on *form*—square, oblong, circle, cube, ball, straight and curved lines; on common *colors;* on the obvious parts and common uses of familiar *objects.*

Number.—*Counting* by ones to 100, by twos and threes to 50; also counting backward by ones from 10: *adding* by ones and twos mingled, to 20: *figures* to be read to 100, and written to 30.

Slate-Writing.—Short words to be printed or written from copies on blackboard or chart.

Drawing.—On slate, from illustration on blackboard, from dictation, and from chart: straight lines, vertical, horizontal, and oblique; angles, right, acute, and obtuse, one side of each angle being horizontal; letters formed of horizontal and vertical lines; letters formed of horizontal, vertical, and oblique lines; two familiar objects, without perspective effect, represented by straight lines.

Vocal Music.—Simple exercises in singing, to train the pupils in the use of musical sounds.

Physical Training.—As often as each half hour, at least. Careful attention should be given to ventilation.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

Basis for Primary Teaching.—Language is the medium of communication between mind and mind, and renders education possible. We perceive by means of our senses; language furnishes the symbols for the ideas we thus obtain, and enables us to communicate them to others. Language exists in two distinct forms, *oral and written.* The oral form precedes the written in the order of learning. An American child of average development learns the use and meaning of two or three hundred words before entering school. This stock of common words, and the ideas which they represent, form the basis or starting-point for the teacher's first work of instruction in written language.

Inasmuch as *the child's knowledge can be extended, through language, only as fast as ideas are acquired from surrounding objects*, it becomes the obvious duty of the teacher of *lessons in written language* to teach first the *forms* of those words which are already known to the child by their familiar use, and then to extend his vocabulary by directing his attention to the objects, their easily perceived properties, uses, shapes, color, etc. Herein may be seen the intimate *relation between object lessons and language*, and also the necessity for including a wide range of objects in these early lessons on written language.

In relation to this matter, *Marcel* says:

"As the child's intellect opens and becomes capable of examining objects minutely, of distinguishing their resemblances and differences, of noticing their *parts*, their *matter*, their *color*, their *form*, and their *number*, his attention should be successively directed to all these points. Thus will his mind be easily brought in contact with the external world, and be duly exercised by ascribing to every object of sense its qualities and peculiar condition. He will also easily remember the words, when the ideas they signify are once clearly apprehended. A correct acquaintance with the meaning and application of words *must not be deemed a matter of little moment in the first years of life.*"

In view of the foregoing statements, it will be seen that *object lessons*, to be made useful, must be so conducted that the pupils shall exercise their several senses. *Mere recitations about objects do not properly exercise the senses.*

It will also be apparent that the proper development of *language* in children must include the actual use of their own senses in attention to the things and doings around them.

Reading.—Before words can express knowledge to a child, they must be intimately associated with things, qualities, and actions, and in such a manner as to represent these to his mind. During the first year of school instruction in reading, words should not be taught until the ideas which are represented have been perceived by the learner.

Teach Words First.—Since neither the names nor the sounds of letters represent any element in the *idea* which a word signifies, the teaching of reading should begin neither with the names of letters nor with the sounds of letters, but with words as *wholes*.

Let the order of teaching be, first, *the idea*, then *the spoken word* which represents it, then the printed word as a sign of both the idea and the spoken word. After this the forms and names of letters may be taught, the small letters first (simple elements of the spoken words). The sounds, etc., are to be introduced during the early lessons.

Each new word selected should be presented to the pupils, first, as a *spoken word*, representing an idea previously possessed, or just gained by the pupils; then, as a *printed word*. Care should be taken to ascertain that the pupils completely associate these elements of reading—the *idea*, the *spoken word*, and the *form of the word*.

Phrases and Sentences.—After the pupils have learned several single words, as described above, they should be taught to read them in groups or phrases, then to join the phrases in sentences. In teaching a sentence, however, it is not necessary to wait until the pupils have learned all the words in it, since many words can be learned best by their use in phrases and sentences. Pupils may be taught to read short, familiar sentences before they have learned all the separate words of which these are formed. See "*Reading Sentences*," p. 23.

Meaning of Words.—Especial pains should be taken to cause the pupils to understand the meaning of each word learned, by associating it with the object, quality, or action which it represents, and also to understand the meaning of phrases and sentences; but *no formal definitions should be taught in the Sixth Grade.*

Words that are Names.—In selecting words for the first reading lessons, choose short words that are familiar names of objects; in teaching these, as far as practicable show the pupils the object, then the picture, then the word. While it is desirable thus to lead the pupils to distinguish

the object, the picture, and the word, each from the others, the pupils should not be required, after a few lessons, to repeat these distinctions.

Words that are not Names.—In teaching words that are not *names*, care should be taken to illustrate their meaning by simple phrases, conversations, etc. The use of phrases composed of two or three words will be found beneficial in teaching words that represent actions, qualities, etc.; as, *my hat—my top—her doll—blue dress—old cat—cross dog—red cow—black horse—new slate—red box—spin the top—roll a ball—clean my slate—cold day—warm day—hot stove—I hold a key—I have a book—I hold a slate—good girl—good boy—sweet milk—apple pie—on the table—take my doll—make a fire—light the lamp—set the table—wash the dishes—shut the door—go to school—learn to read*, etc. It will add much interest to the lessons in sentences, and will help the pupils to understand that good reading is much like talking, to require a child to stand before the class, take the object named in one hand, and point to the words while reading the sentence.

Letters.—When a few words have been taught as wholes, the *names of the letters* which compose the words should be given. As additional words are learned, the pupils may be required to name such letters in them as they have learned in previous words; then the remaining letters may be taught. In this way the twenty-six letters of the alphabet will be taught by their use in words. Subsequently the letters should be reviewed and learned in their usual order. The *small letters* are to be taught first.

List of Words.—The list of familiar words taught in this grade should include those commonly used as names of articles of dress, food, and furniture, and of utensils

used in the house; of things used in the school-room; common animals; names of familiar qualities, actions, etc.; such as, *cap*, *hat*, *shoe*, *boot*, *coat*, *vest*, *dress*, *bonnet*, *apron*, *shawl*; *cake*, *bread*, *pie*, *milk*, *beef*, *fish*, *cheese*, *butter*; *chair*, *bed*, *sofa*, *table*, *clock*, *lamp*, *stove*, *broom*, *kettle*, *carpet*, *bowl*, *cup*, *pan*, *tub*, *plate*, *fork*, *knife*, *spoon*; *book*, *slate*, *sponge*, *bench*, *bell*, *pencil*, *blackboard*; *cat*, *cow*, *dog*, *horse*, *goat*, *sheep*, *lamb*, *rat*, *mouse*, *hen*, *duck*, *goose*, *swan*, *chicken*; *old*, *new*, *good*, *bad*, *sweet*, *sour*, *salt*; *small*, *large*; *walk*, *run*, *jump*, *swing*, *ride*, *sing*, *talk*, *play*, *eat*, *smell*, *taste*, *see*, *hear*, etc.

It is not the number of letters of which a word is formed that makes it easy or difficult to be learned objectively; *the ease of learning words depends upon familiarity with their use in conversation.* Do not, therefore, confine the pupils to words which are composed of only three or four letters.

To insure uniform progress in learning familiar words, there should be prepared for each grade a list of suitable words. This list should be prepared or approved by the Principal. The list for the *Sixth Grade* ought to contain at least *one hundred and twenty-five words.* To complete the list in four months, the pupils would be required to learn, on an average, only *two new words each day.* This would leave ample time for daily reviews.

Spelling.—The spelling of words naturally follows the reading of words. To teach spelling before reading leads to many faults in reading. Spelling should be learned through reading and writing. A knowledge of spelling is chiefly useful for conveying thoughts by means of writing.

A variety of modes of teaching the letters and the spelling of words may be used. The pupils may be told the

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name of each letter in a word, and be required to repeat it after the teacher, as it is pointed at. The pupils may point to and name each letter in the given word. They may be requested to name the letters in the order necessary to form a given word, while the teacher writes the word on the blackboard.

The teacher may rub out a letter or letters from a word and request the pupils to name the letters required to complete the word. They may also be required to spell the words orally. Let them also copy the words on their slates. This exercise will aid in learning the forms of both letters and words, and thus will teach spelling in a practical manner.

While the pupils are learning the shapes and names of the letters they may be required to copy words in *print letters;* but as soon as practicable the script letters should be used for spelling. Copying words from the blackboard, on slates, is an excellent exercise in spelling. This should be followed later in the term by *writing* some of these words on slates from dictation—the words selected for this purpose being short and simple; as, *man*, *mat*, *cat*, *cup*, *pan*, *slate*, *cow*, *rat*, *mouse*, *hen*, *swan*, *new*, *run*, *sing*, etc.

Elementary Sounds.—In first presenting this subject, the teacher should utter a sound, and require the pupils to imitate it. Afterward the teacher should utter separate sounds and request the pupils to tell *what sounds* are made. When their organs of hearing and of speech have thus been trained both to *distinguish* and to *imitate* sounds, the teacher should proceed to associate the sounds with the letters. The teacher should bear in mind that it is not the science of phonology, nor a description of the different sounds which the several letters represent, that

should be made the aim of the instruction in this subject, but simply and chiefly the training of the organs of hearing in the accurate perception of spoken sounds, and of the organs of speech in the correct enunciation of those sounds. The purpose of training pupils to perceive and utter simple elementary sounds is, to assist them to acquire distinctness of articulation and correctness of pronunciation, as they advance in the use of language.

Words Compared by Sound and Form.—For the purpose of leading the children to observe readily the *analogy of words*, in their sounds and in the arrangement of their letters, place in columns on the blackboard words already learned, nearly similar in spelling and sound, as shown in the following groups:

cat	*fan*	*pin*	*pen*	*ox*	*gun*	*nest*
rat	*man*	*tin*	*hen*	*fox*	*run*	*vest*
hat	*ran*	*fin*	*ten*	*box*	*sun*	*rest*
mat	*can*	*chin*	*men*	*top*	*fun*	*chest*

cake	*arm*	*wing*	*old*	*vine*	*cow*
bake	*farm*	*string*	*cold*	*pine*	*how*
make	*harm*	*sing*	*fold*	*nine*	*now*

Groups of words may also be presented which will lead pupils to notice the changes in sound that are produced by the addition of a single letter to a word; as,

cap	*cape*	*pin*	*pine*	*hop*	*hope*	*plum*	*plume*
can	*cane*	*fin*	*fine*	*not*	*note*	*tub*	*tube*
hat	*hate*	*hid*	*hide*	*rod*	*rode*	*us*	*use*
ran	*rain*	*met*	*meat*	*cot*	*coat*	*led*	*lead*
pan	*pain*	*set*	*seat*	*got*	*goat*	*fed*	*feed*

By means of such groups of words, the pupils may be led to observe the analogy which exists between the spelling and the pronunciation, and thus to learn to pronounce new words of similar formation. These exercises will also aid in learning the spelling of the words thus compared.

Reading Sentences.—When and how should instruction in reading sentences begin?

The reading should begin with short sentences that represent spoken sentences familiar to the pupil. But before placing these sentences on the blackboard, the teacher should lead the children to use the desired sentence in conversation. The kind of short sentences that children will readily give, and that are suitable for the first lessons in reading sentences, are indicated in the phrases and short sentences already given in the suggestions for teaching "*Words that are not Names*," and in the following list: *The ball rolls; sweep the room; dust the chairs; my bird sings; hear the dog bark; see the old cat; see the dog run; I can fly a kite; I hold a key; I have a book; Jane rolls her hoop.*

In conversation, phrases and sentences are spoken as wholes, with but little attention to single words. When placed on the blackboard, *they should be read first as wholes*, and attention should be directed to single words afterward. Exercises of this character lead children to read at once as naturally as they speak. Teachers who follow these suggestions will soon learn that they need not hesitate to use some words in sentences before the pupils know them by sight.

In teaching words that are thus new to the pupils, let the class pronounce single words as pointed at by the teacher; let the pupils point out words as named; let

the words be spelled singly and in groups; let the entire sentence be spelled; rub out words, and let the pupils supply them in reading.

Change words in sentences which have been learned, and let the pupils read the sentences as changed. Also request the pupils to suggest similar changes in other sentences. Let them give new sentences to be written on the blackboard.

In the use of *charts* for teaching reading, direct the attention of the pupils first to pairs and to groups of words which should be spoken together; teach them to read these together, and then the entire sentence.

Object Lessons.—Reading, spelling, and arithmetic do not supply all the needed opportunities for fixing the attention and continuing the interest of young pupils to the extent necessary for securing the important results which should be attained in the elementary stages of education; nor do these studies furnish the varied exercises requisite for thoroughly training the several senses and the powers of observation.

It is the important province of *object lessons* both to introduce and to supplement the other studies of school, and to bring the matters of instruction home to the pupil's own experience. In these relations they become the most important *aid in the development of language.*

True object teaching draws its materials from all branches of knowledge, and deals with whatever things should interest the child, or exercise his mind in gaining and expressing definite ideas.

In the giving of object lessons, whatever may be the topic, the teacher needs to be guided by a well-defined plan. Lessons without a proper beginning or a definite ending, and without special exercises by individual pupils,

do not result in mental training. The chief purpose of the lesson is not to teach the science pertaining to the object presented, nor merely to tell certain facts in regard to it, but to use the object as an aid in the development and training of the pupil's powers of mind in accordance with the principles and laws that govern the development of those powers.

Form.—First present the form, the square for instance, as a whole; then lead the pupils to observe those parts and shapes by which it is distinguished from other forms. Compare two or more forms, leading the pupils to notice their resemblances, then their differences. When the pupils can distinguish a simple form, as a square, or an oblong, require them to notice or to discover objects having the same shape. Use as great a variety of objects as possible to illustrate and represent the several forms; as sticks, splints, strings, and marks, for lines and corners; pieces of wood, paper, and familiar objects to represent forms and solids. Select accurate forms for the first illustrations, so that the ideas of the given shapes may be correct. In this manner proceed to teach all the forms, solids, and lines required in this grade—square, oblong, circle, ball, cube, straight, and curved lines—using common objects to illustrate them, and simple terms in describing them.

Do not make the DESCRIPTION *of forms a prominent feature of the lessons in this grade.*

Common Colors.—The most important purpose of the lessons on color should be to develop and test the *color-sense*, or the ability to perceive resemblances and differences in colors. Use the chart of colors, color-cards, colored papers, ribbons, and other objects, to lead the pupils to distinguish and to name the common colors, *red*, *yellow*,

blue, *orange*, *green*, *purple*, etc. Show the best representatives of each color, that the pupils may obtain correct ideas of it. To give the children experience in distinguishing colors, let them place together two or more objects of like color. Use a variety of exercises for these lessons, remembering that *colors can be learned only by seeing them; therefore do not try to teach them by a recitation of their names.*

Familiar Objects—their Obvious Parts and Common Uses.—The particular objects most appropriate for these lessons will vary with different classes. The teacher should select those objects with which the pupils already have some acquaintance, and use them in such a manner as to connect home experiences with school lessons, and with a view to teach the children to gain more definite and thorough knowledge of the given object while training them to form habits of observing more carefully and intelligently.

The following objects are among those especially suitable for these lessons: *Children's playthings, household utensils and tools, things used in the school-room, and other objects familiar to the pupils.*

These lessons should be so conducted as *to furnish such information as will satisfy the natural desire of children to know*, and should answer those questions which the objects naturally prompt them to ask. Let the lessons be simple and suitable to young children, and so systematized as to confine attention to one thing or feature at a time, thereby leading to orderly habits of learning. As far as practicable *arrange the exercises so that the children may themselves have something to do with each object.*

Recitations about objects, without actual observation, do not constitute object teaching.

NUMBER.

Counting.—A child's earliest notions of number are concrete, not abstract. His knowledge of number begins with counting actual objects; therefore, the first exercise for teaching this subject should be the counting of objects. He should be taught to count his fingers, balls on the numeral frame, panes of glass, and other objects in the room; also marks on the blackboard. When the pupils can count *ten objects* readily, they should be taught figures from 0 to 9 as symbols of numbers.

Figures.—Let the pupils count *one ball*, *one pencil*, *one finger*, *one mark*, then learn *figure* 1; then count in groups *two balls*, *two fingers*, *two pencils*, *two marks*, etc., and learn figure 2. Next lead the pupils to see that *two* is equal to *one and one*, or *two ones*. Continue to count out groups of objects to represent each number, and to teach the figures that represent the groups. Lead the pupils to see what each number is equal to; as, that *three* is equal to *one and one and one*, or *three ones*, or *two and one;* that *four* is equal to *four ones*, or *three and one*, *two and two*, or *two twos*. Proceed in a similar manner to teach each number and figure as far as nine. By this means the pupils will learn the real value of the figures and the numbers that are represented by them.

To give the pupils additional exercises for learning how many objects each figure represents, let them count as many balls, or other objects, or hold up as many fingers as the given figure represents. They may be allowed, also, to clap their hands three times for figure 3, four times for figure 4, and so on, as another mode of showing that they understand the value of the figures.

Figures in Groups.—Figures should be taught in groups, as signs of numbers counted: first group, 0 to 9; second group, 10 to 19; third group, 20 to 29, etc. The counting of objects should precede each group, and should extend beyond the highest number of the group. No group should be commenced until the preceding one has been so thoroughly learned that the figures which represent each number in it can be read at sight. *Mere rote exercises in counting should not be allowed either with or without the numeral frame.*

Adding Concrete Numbers.—The pupils may be taught to *add* balls on the numeral frame by *ones;* then to *add* figure 1s in a column on the blackboard; then to add a column of 1s on their slates. Subsequently teach them to *add* balls by *twos;* then to add a column of 2s on the blackboard; then on their slates. Proceed in the same manner with *threes.* Afterward the pupils may be taught to add 1s and 2s in the same column; then 1s, 2s, and 3s in the same column. A variety of exercises should be introduced by which the pupils will be required *to add one* to each number from one to twenty. As far as practicable, objects should be used by the pupils during the first steps of these lessons.

Remember that the three steps to be taken in each exercise are: 1, adding objects; 2, adding figures on the blackboard; 3, adding figures on slates.

Counting Backward.—Counting backward by moving away one ball at a time from a group, and telling how many remain, constitutes the first step in subtracting; thus, *ten balls, nine balls, eight balls, seven balls, six balls,* etc. Supplying the pupils with objects, as "splints," which they may place on slates, held in their laps, and may use in exercises for counting, adding, and subtract-

ing, will assist them in learning the three elementary steps in number.

Reading and Writing Numbers.—Figures are to be learned first as signs of numbers counted; these numbers should be read and written as wholes, whether expressed by one or two figures. Nothing should be said about *numeration* in the Sixth Grade.

The *writing of figures*, as well as the reading of them, should be taught in appropriate groups. In writing them on the blackboard, the figures may be placed in their groups, first in lines, as follows:

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29

Afterward these groups may be written in columns, as here given:

0	10	20
1	11	21
2	12	22
3	13	23
4	14	24
5	15	25
6	16	26
7	17	27
8	18	28
9	19	29

Care should be taken to have the figures properly placed in the columns.

That which children recite about numbers or figures is

of little value when compared with that which they *should do with them.*

It is expected that the pupils, before promotion to the Fifth Grade, will be able to read at sight any number below 100.

N. B.—*Teachers of this grade are particularly cautioned not to allow their pupils to count, spell, or repeat words in concert with sing-song tones.*

SLATE-WRITING.

It is desirable that the pupils in this grade should have, at least during the first month in school, exercise in making the *print* form of letters on their slates, in order to aid them in learning the alphabet. During the second month in school, the *writing* of simple script letters may commence, from copies on the blackboard. During succeeding months, short words should be written from copies on blackboard or chart. The form of the letters should be plain, and no capitals should be used. Attention should be given to the position of the slate, and to the manner of holding the pencil.

The pupils should be taught to read words and sentences in *script* as a part of the plan of teaching reading from the blackboard.

FIFTH GRADE.

Outline Course.

Language Lessons.—*Reading*—from the blackboard, charts, and a First Reader: exercises in *elementary sounds* continued: the *meaning* of words and phrases to be associated with their use in the sentences read: names of *punctuation* marks as they occur in the Reader: *spelling*—words from the reading lessons; also other familiar words: lessons on *form*, as in the preceding grade, continued with proper additions; on common *colors*, compared and named; on the obvious parts and uses of *familiar objects* continued, with special attention to the development of observation and language.

Number.—*Counting* by threes, fours, and fives to 100: *adding* by twos, threes, fours, and fives to 30, on the blackboard and the slate: *subtracting* on the numeral frame, twos, threes, fours, and fives, from numbers below 21: *multiplying* by two the numbers below 6: *figures* to be read at sight from the blackboard, and written to 1,000: *Roman numbers* to XL.; also their use on the clock face.

Slate-Writing.—Lessons in writing short words from copy.

Drawing.—On slate, illustrated on blackboard, from dictation and from chart: draw horizontal, vertical, and oblique lines, and mark off one, two, three, and four inches on them; divide lines by points into two, four, and eight equal parts; horizontal, vertical, and oblique parallel lines three inches in length, with half-inch spaces between them; square, side three inches, divided by diameters; square, side four inches, divided by diagonals; right-angled triangles, longest side four inches; oblong, 3 in. by 2 in., divided by diagonals; two familiar objects, without perspective effect, containing the plane figures of this grade.

Vocal Music.—Continued as in the Sixth Grade, with two or three simple songs and the scale by rote; represent steps of the scale, and give simple ideas of time.

Physical Training.—As in the Sixth Grade.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

Reading.—Before pupils are promoted to the Fifth Grade they should be taught to read short sentences, as described in the suggestions for the Sixth Grade. This important step should be taken before books are placed in their hands. The transition from reading from blackboard or charts, to reading from books, requires special attention, in order that the first steps in reading from books shall be properly taken.

Teach Use of Books.—In this grade the pupils are to be taught the use of books, and how to discover what the groups of words and sentences tell. How may all this be successfully accomplished? Careful attention to the following suggestions will enable teachers to find an answer to this question.

Short exercises may be had from day to day for training the pupils to pass books from one to another in an orderly manner, to hold them properly for reading, to find given pages, etc. On the days in which this preliminary training is given, the teacher may select from the Reader two or three suitable sentences (such as contain words, phrases, etc., similar to those already learned from the blackboard or chart), and place them upon the blackboard, and then teach the pupils as in the instructions for the Sixth Grade.

Words in Groups.—Pupils should be trained to notice that in reading, as well as in talking, words are used in groups. By writing the sentences selected from the Reader somewhat as follows, the pupils may be led to give due attention to this matter:

The boy	*He*	*Can*
has	*can spin*	*the cat spin*
a top.	*his top.*	*a top?*
The cat	*The man*	*Jane*
is on	*has a fan*	*may take*
a mat.	*in his hand.*	*her fan.*

When the pupils have learned the separate words and the several groups on the blackboard, let them read the groups in order and discover what the *sentence* tells. Then require them to pass their books, to find the given page (that containing one or more of the sentences learned as above), and on it *single* words like those on the blackboard; and then groups of words, and to read them at sight. Afterward let them read from their books the sentences which they have learned from the blackboard. When the pupils can readily find and read the several *sentences* of a lesson, require them to *read the entire lesson in order*, taking care that due attention is given to the groups of words.

In this way proceed from day to day, teaching each lesson from the blackboard before it is read from the book. To prevent the pupils from repeating the sentences from *memory* instead of reading them, place them on the blackboard in a different order from that which they occupy in the book.

The teaching of new lessons first from the blackboard will keep the attention on the special point of instruction more effectively than will the teaching from books alone. This plan of teaching the lesson first from the blackboard and then from the book may be used to advantage for several weeks at the beginning of the Fifth Grade.

☞ In order to train pupils in habits of self-reliance, care should be taken from the first to teach them to *learn the sentence by sight.* To this end *the teacher should not read the lesson for the pupil before the pupil has read it for himself.* By due attention to this matter *learning to read by rote*, or by hearing only, will be avoided.

Ideas and Words to be Associated.—The only real use of a printed or written word is to recall an idea. Such a word is not taught until it has been so associated that when it is seen it will recall the idea which it symbolizes. The same fact may be stated in relation to sentences and the ideas which they represent. Hence, the teaching of reading consists essentially in leading pupils to make the proper association of ideas with words and sentences, and then training them to utter the words and sentences so as to express those ideas clearly to others. That teaching which assists these acts of association helps the child in learning to read; that which does not assist these acts of association is useless, and may be even injurious to the pupils. *Good methods of teaching reading will include only those devices which aid the pupils in associating words and sentences with the ideas that they represent, and in properly expressing them.*

Reading New Lessons from Books.—After a few weeks the pupils will be able to learn to read new lessons from the book without first learning them from the blackboard. To do this successfully, the attention of the pupils must

be directed to groups of words and to phrases and sentences, rather than to single words, even if the lesson contains a few words not known to the pupils. By proper instruction, these new words will be learned by their use as the pupils become acquainted with the phrases and sentences containing them.

The character of the methods that may be used in teaching reading from books will be apparent from the following illustrations:

1. Suppose the lesson selected contains the following sentences:

> See my top, Minnie!
> It will spin on this box, and not drop off.
> Yes, I see it, Tom; but I think it will drop off.

Place the books in the hands of the pupils; then request each *to find two or more words that tell something.* A hand is raised to indicate readiness to read the words, and the teacher says: What do the words that you found, tell? The child answers, "See my top." Another one says, "It will spin." Another reads, "I see it." Another, "On this box." Another, "It will drop off."

Afterward the teacher asks, Who said, See my top? The class may answer, "Tom." Who said, It will spin? "Tom." Who said, I see it? "Minnie." Who said, On this box? "Tom." Who said, It will drop off? "Minnie." What did Tom say about this? "It will not drop off."

James may now read what Tom said in the first line.

Frank may read what Tom said in the second line.

William may read what Minnie said.

Other pupils may be called upon to read the same sentences until all in the class are familiar with them.

2. Suppose the lesson selected contains the following sentences:

A boy has two legs, but a bee has six.
Has an ox six legs? No; it has four legs; two on each side.

After the books have been placed in the hands of the pupils, the teacher may proceed as follows: What are the *first* two words? The next *three* words? The next word? Sound it as I do—*b-u-t*. Spell it. The next *two* words? The next two words? What does this tell you about a boy? What does it tell you about a bee?

What is the first word in the next line? Sound it. Spell it. The next two words? The next two words? What do the five words ask? Can you find the answer to this question? Read the first word in the answer. What does the word *it* mean? Now read *it*, and the three words that follow. Read the last four words.

Now Jane may read what this lesson says about a boy. Lucy may read what it says about a bee. Susan may read what it *asks* about an ox. Mary may read what it *tells* you about an ox. Let one pupil read what it says about a boy and a bee; and another read all that it says about an ox.

3. Suppose the lesson selected contains the following sentences, in which are several words not familiar to the pupils:

Tom took his pole down to the brook to fish.
O you silly little fish, look out for that sharp hook!
Swim away, or Tom will catch you.
"There!" said Tom, "I have one, and a big one, too."
Up went the line, and down went the fish into the brook.

The teacher may select one of these unfamiliar words; let the pupils try to pronounce it; then tell them what it

is; let them sound it after the teacher; then spell it; then tell what it means, or the teacher may explain it. Proceed in this way to teach the form, meaning, and pronunciation of the most difficult words; then ask the pupils to read other words with those thus learned. By this means the pupils will be led to read the words in groups of two or more, somewhat as follows: "Tom took his pole." "Down to the brook." "You silly little fish." "Look out for that sharp hook." "Swim away." "Tom will catch you." "I have one." "A big one, too." "Up went the line." "Down went the fish." "Into the brook."

Now read the words that tell where Tom went. Read the words that tell what he took with him. Why did Tom go to the brook? Read the words that tell what some one said to the fish in the brook. What more was said to the fish? Read what Tom said. Read the words that tell what the line did. Read those that tell what became of the fish.

Afterward request separate pupils to read the several lines in order.

N. B.—Sometimes it will be necessary for the teacher to read a sentence in order to show how it should be read, and to assist the pupils in forming a standard by which they may judge the character of their own reading. After such illustration by the teacher, several pupils should be requested to read the same sentence, and the others to observe whether it is read as the teacher read it. Such training is more useful to young pupils than all the rules for reading.

From the foregoing illustrations may be seen the important aims that pervade all the methods, viz.: To train the pupils in habits of finding out for themselves

the thoughts contained in each sentence, so as to make the lesson read as real as a story told, and to develop the ability to read the story as if they were telling it.

Many other methods may be used to accomplish the same purpose. Two or three methods may be employed in the same lesson, on different days. The results will be satisfactory when the pupils have attained the ability to read new lessons intelligently.

Faults to be Avoided.—There should be no so-called "study" or "spelling" in concert for the purpose of learning the *spelling* of new words. Such a plan employs *bad methods* and leads to *mechanical results in reading; no Principal should permit their use.* Those who concentrate their efforts in teaching reading from books, first upon individual words, then upon the pronunciation of those words in their order, lead their pupils astray.

Do *not* teach the pupils to say "*thŭ boy*," "*ŭ top.*" Good usage requires that *the* and *a* before words commencing with consonant sounds should be spoken lightly and with the following word, but *they should never be perverted to thŭ and ŭ.*

When the child learns to spell *the*, let him give the *first* sound to the *e* in pronouncing it. But when he reads this word in a sentence, as, *see the cat and the dog play*, let him pronounce it with the following word, as if it formed the first syllable of that word, speaking *the* lightly, as in the words *e-vent'*, *e-vade'*. The *a*, when used as a word in like circumstances, should be pronounced like *a* in *a-muse'*.

☞ The practice of requiring children *to point at each word read should be avoided*, as it leads to *reading words singly* instead of in their proper groups, and prevents due attention to the thought represented by the sentence. The pupils can "keep the place" in the lesson by point-

ing at each line as it is read; but even this practice should be used only for a short time. Before leaving the Fifth Grade the pupils should be able to "keep the place" without pointing at all.

Progress in Reading.—The number of new reading lessons each week should be from three to five. After three-fourths of the pupils have learned *to read a lesson* in a proper manner, a class should *not* be kept on that lesson for the purpose of training each forgetful child to remember the spelling of every word in it. Learning to read being the chief business in these lessons, spelling should not be allowed to interfere with it. In the Fifth Grade, *not less than three pages of reading* (*in an ordinary first reading book*) *should be taught each week* during the first month; and *four or five pages each week* during subsequent months.

Meaning of Words.—It is expected that each teacher will make her pupils familiar with the meaning of the principal words of the reading lesson, by conversation, questions, illustrations, etc. In reviewing lessons, in order to ascertain whether the pupils know how to apply the words, the teacher should request them to use the word in saying something; as, "A *cart* has two wheels." "*Snow* is white." "I *hold* my book." "I must *obey* my mother." "My book is *new*." "Horses eat *hay*." "I *found* a slate pencil." "It is *dark* at night." "A *hive* is a house for bees." "A *swan* has a long neck." "A fish can *swim*." "We light a *lamp* at night." "A *bird* can fly." "A horse is in the *barn*." "I live in a *house*." "My *sponge* is full of holes," etc. Even this exercise should not be made a formal one; but it should be of a conversational character.

Exercises in the use of words should be given in con-

nection with each reading lesson ; and the pupils should be required to show the meaning of the words and phrases used while their books are open at the lesson. This will lead to the formation of the habit of attending to the meaning of what is read.

Elementary Sounds.—Exercises similar to those of the Sixth Grade should be continued, and be so conducted as to train the pupils in distinctness of enunciation, both in speaking and in reading. Direct attention to the sounds of given letters in words of the reading lesson. Request the pupils to find words in which *a* has the same sound that it has in *at ;* the sound that *a* has in *take ;* that *a* has in *all ;* that *a* has in *car.* In the same manner lead the pupils to find words having sounds of *o*, of *e*, of *i*, of *u.* Teach the pupils to find *f*-sounds, *k*-sounds, *m*-sounds, etc.

Punctuation Marks.—Teach the *names* of such marks as occur in the reading lesson, and give a simple explanation of the use of the period and the question mark ; *no formal definitions of them should be allowed.*

Spelling.—The exercises in spelling in this grade become more distinct from those in reading than in the Sixth Grade. *Pupils should learn to spell by copying words on their slates*, and also by oral exercises. In oral spelling, the word should be distinctly pronounced by the pupil before spelling it ; then each letter should be clearly uttered, *a pause being made between syllables*, and the word again be pronounced.

An interesting exercise in *written spelling* may be had by placing on the blackboard a list of words, and requiring the pupils to copy these words on their slates, and then, in opposite columns, to write other words formed by omitting letters, or by affixing other letters, or otherwise changing some part of the given words. The *first* col-

umns, given below, may represent the list of words written by the teacher, and the other columns those formed by the pupils.

1.	2.	1.	2.	2.
hate	*hat*	*horse*	*house*	*mouse*
mate	*mat*	*could*	*would*	*should*
late	*ate*	*kind*	*find*	*blind*
cold	*old*	*wood*	*good*	*stood*
sold	*told*	*these*	*them*	*the*
rose	*nose*	*nest*	*rest*	*vest*
talk	*walk*	*cake*	*bake*	*rake*
stove	*store*	*heat*	*neat*	*seat*
sing	*ring*	*sight*	*light*	*right*

The words learned in the Sixth Grade should be reviewed in the Fifth, and about *one hundred and fifty new words learned.* Among these there should be included familiar words, such as were indicated for the Sixth Grade. Special attention should be given to words found to be difficult in the previous grade.

N. B.—All teachers are especially warned not to use any concert exercises for studying or recitations.

Object Lessons.—The instructions given in relation to this subject, for the Sixth Grade, and the subjects and methods stated there, are appropriate for the exercises of this grade also. It is desirable, however, that the lessons on each topic (form, color, etc.) be divided into *three* or *four parts*, each part to occupy the time given to that topic for one month. By this means each month of the grade will have its due proportion of new lessons, and ample time will be left for reviews. For illustration :

Form.—During the *first month* in this grade the lessons

on *Form* might be devoted to a careful review of the instructions of the previous grade, with the addition of *wave and spiral lines;* also *position of lines*, as vertical, horizontal, oblique.

During the *second month* add *sphere*, *hemi-sphere*, and *semi-circle.*

During the *third month* there may be added *cylinder* and *triangle.*

During the *fourth month* there may be added *acute*, *obtuse*, and *right angles.*

☞ In giving *new lessons* on form, the teacher should proceed as in the Sixth Grade. *In reviewing* lessons, the pupils should *point out* the forms; *mention objects* of similar shape; try to *make the shape* from paper or other appropriate material; *draw it*, and finally *describe* it.

Color.—The lessons on Color, in this grade, should require the pupils to match colors; to point out and name the colors learned in the previous grade; to learn the names of other common colors, as *pink*, *scarlet*, *sky-blue*, *violet*, *brown*, *drab*, etc.; and to name objects having these colors.

An important part of the instructions should consist of *exercises in matching like colors*, and in *separating unlike colors.*

Familiar Objects. — Exercises similar to those of the Sixth Grade should be continued, and the number of objects used for lessons be increased. It is desirable to lead the pupils to notice the action of their own *senses*, and to observe how they distinguish one object from another; to notice how they learn the shape, color, taste, and other qualities of objects, and what they learn by a given sense. For instance, some things are learned by sight; as, colors, shapes, etc.: some by taste; as, sweet, sour, salt, bitter:

some by touch; as, hot, cold, hard, soft, etc. The pupils may be trained to observe these facts readily, by requiring them to tell how they find out that a thing is sweet, sour, salt; hard, soft; hot, cold, warm; rough, smooth; heavy, light. These exercises, if properly conducted, will aid them in learning the meaning of words in the reading lessons.

☞ Whenever possible, arrange the exercises of each subject so that the pupils may be called upon *to do* something *with their hands. Children learn much faster by doing* than by merely repeating what they have been told.

NUMBER.

Counting and Adding.—These should be continued as in the previous grade, and extended so as to include *fours* and *fives.* Care should be taken to cause the pupils *to count the balls and not to allow a mere recitation of words by rote.* Commence the counting with *one* and proceed by *threes.* Afterward commence with *two* and proceed by *threes.* Give similar exercises in counting and adding with *fours* and *fives.* When the pupils have become familiar with such exercises, let them add *twos* and *threes* alternately; also *threes* and *fours* alternately; the sum only should be named, after the *two* or the *three* has been added, thus (2 and 3 alternately): 3, 5, 8, 10, 13, 15, 18, 20, 23, 25, etc.; also (3 and 4): 4, 7, 11, 14, 18, 21, 25, etc.

After the counting and adding on the numeral frame, write the same numbers in their order on the blackboard, and teach the pupils to add their signs, the figures. Next require these to be copied on slates and added.

Adding figures, "on the blackboard and the slates, 2s, 3s, 4s, 5s to 30," may be presented in the following form for *the first lessons:*

2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	etc.
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	etc.
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	etc.
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	etc.

For these exercises, only one number, as 2, with its several additions, should be put on the blackboard, or on the slate, at a time. The design of these combinations is to make the pupils familiar with the sums produced by the additions of 2s, 3s, 4s, 5s to numbers below 30.

Oral adding may be effectively reviewed by questions such as the following: 4 and how many are 6? 2 and how many are 6? 3 and how many are 6? 6 and how many are 8? 4 and how many are 8?

Subtracting.—This exercise is to be continued, as in the previous grade, and to include the taking away of *balls*, or other objects, by *twos*, *threes*, *fours*, and *fives*, from groups containing fewer than 21. The teacher can devise many ways for giving this exercise.

Multiplying by Two.—By means of balls, splints, or other objects, and by marks on the blackboard and on the slate, *illustrate the idea of taking the same number two*

times, as a step introductory to multiplying. Additional illustrations may be given by arranging dots, or marks, in groups, as follows: Two .. .. are 4; two ... ... are 6; two .... are 8; two .... are 10. Two || || are 4; two ||| ||| are 6; two |||| |||| are 8; two ||||| ||||| are 10. In reading these, let the pupils say *two twos* are four; *two threes* are six; *two fours* are eight; *two fives* are ten. The pupils will notice that taking a number of objects *two times* is very much like *adding* two groups, or numbers.

As far as practicable these exercises should be so conducted that *the pupils will arrange the objects* in proper groups.

Reading and Writing Figures to 1,000.—The pupils having learned in the previous grade to read figures to 100 and to write them to 30, exercises should now be given to extend this work. This can be thoroughly accomplished by arranging numbers in groups to be read without numeration, and to be copied on slates.

First Group.	*Second Group.*	*Third Group.*	*Fourth Group.*
10	100	100	200
11	200	101	201
12	300	102	202
13	400	103	203
14	500	104	204
15	600	105	205
16	700	106	206
17	800	107	207
18	900	108	208
19	1,000	109	209
20		110	210
etc.,		etc.,	etc.,
to		to	to
99		199	299

Subsequently these numbers should be read and written without regard to this order.

If properly conducted, these lessons will train the pupils to read and write numbers through 199 in one month, and any number below 1,000 in three months.

Roman Numbers.—It is well that the pupils should first learn the value of each of the three letters used to represent numbers below forty: I, *one;* V, *five;* X, *ten.* When the values of these letters have been learned, proceed to teach the value of II, *two;* XX, *twenty.* Then teach the value of III, *three;* XXX, *thirty.* Then teach the numbers in their order and their use in reading-books. In this grade the pupils should be taught how to tell the time by the clock, at least so far as to include the hours, half-hours, and quarter-hours.

SLATE-WRITING.

When the pupils enter this grade, they should be sufficiently familiar with *script letters* to enable them to read known words, plainly written on the blackboard, with a fair degree of readiness. More attention should now be given to *copying simple words* in script. Each child may be taught to copy his or her name in plain script, with the proper capitals.

Attention should be given to the manner of holding the pencil, and to the position of the slate.

FOURTH GRADE.

Outline Course.

Language Lessons.—*Reading*—through a First Reader or in an easy Second Reader: the *meaning* of words and phrases to be taught from the sentence: exercises in elementary *sounds*, continued: names of *punctuation* marks, continued: *spelling*—words from the reading lessons and other familiar words: lessons on *form*, continued, with appropriate additions; on *color* continued; on familiar *objects*, continued, with obvious qualities added.

Arithmetic.—*Numeration and Notation*—through six places: *adding* single columns of ten figures, including 6, 7, 8, and 9; *adding orally* by sixes, sevens, eights, nines, and tens: *subtracting* threes, fours, fives, and sixes from numbers below 31: *multiplying* numbers below 11 by two: simple practical questions: Roman numbers to C.

Slate-Writing.—Short sentences from copy.

Drawing.—On slate, illustrated on blackboard, from dictation and from chart: equilateral and isosceles triangles, longest line four inches; rhomb, side four inches; rhomboid, 4 in. by 2 in.; concentric squares, sides four inches and two inches, on diagonals; concentric squares, sides four inches and one inch, on diameters; regular octagon; two familiar objects, without perspective effect, containing the plane figures of this grade.

Vocal Music.—Instruction as in Fifth Grade, continued, with additional songs by rote.

Physical Training.—Every half hour, from two to three minutes. Careful attention to be given to ventilation.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

Reading.—The teacher, on beginning the instruction in reading for the Fourth Grade, will find it advisable to read the suggestions for teaching this subject in the Fifth Grade. It will be found useful to place on the blackboard the most *difficult new words* in the lesson, and to make the pupils familiar with them before the reading books are put into their hands. Most of the exercises for teaching the words of new lessons should be given with the books.

Conversational Exercise.—Before the pupils are required in turn to read a new lesson, their attention should be directed to the *meaning of the important words* in it, to the principal facts or thoughts of the sentences, and to the subject of the lesson, in such a manner as will cause them to understand what they are subsequently to read. To do this the teacher may conduct a *conversational exercise* with the class somewhat as follows, while the pupils have their books open at the given lesson:

What is this lesson about? What does the first line tell you about it? Who said that? What question do you find in the first paragraph? Can you find the answer to that question?

The first pupil may read the question. The next one may read the answer.

Now look at the next verse, and tell me what it is about?

Suppose the lesson to be about two boys who broke a bowl, one of whom proposed to charge the mishap to the dog.

The teacher might say:

We are going to read about two boys. Who will look at the lesson and tell me their names? Who can tell how old these boys were?

Which boy would always tell his father and mother when he did anything wrong? Did the other boy do so? What would he do? Which was the better boy?

Who can tell me where these boys were? Where was their mother? What was in the room with them? What did one of the boys say? What did the boys do with the dog? What happened while they were playing? Who spoke first after the accident? What did he say?

By means of such an examination of the lesson, with their books open, the pupils will learn both the words and their general meaning, so as to be able to answer the questions of the teacher in an intelligent manner, and thus will be prepared to read the lesson properly. Next require the several pupils to read singly. Take care that they read each sentence as it should be spoken when telling the story.

During all the exercises in reading care should be taken to make the pupil *know the words at sight, to know what they mean in the lesson, and to read in an easy manner, with tones of voice resembling those heard in good conversation.*

That the pupils may know what is meant by good reading, examples must be given by the teacher, but the *pupils should not be taught to read by imitation alone.* It

is important to train them so that they shall learn to depend upon their own understanding of the lesson as the means of deciding how it should be read. Thus they will acquire the power of self-improvement, and of reading intelligently.

As a means of leading the pupils *to discover the thoughts of the sentences* and to *train their judgment in deciding how to read them*, let the following questions be asked frequently, viz.: *What does this say? How should it be said?*

Such a process of teaching will develop in the pupils the power to read new lessons with far better results than can be attained where pupils are taught to read chiefly from *imitation.*

Faults in reading are most easily overcome when the efforts to correct them are directed chiefly to one kind at a time, and the training to overcome it is continued until the pupils clearly perceive the nature of the fault, and can take the means to correct it.

N. B.—From three to four of the usual reading lessons of an easy Second Reader ought to be taught each week in the Fourth Grade.

Meaning of Words.—The exercises for teaching the meaning of words in this grade should generally be conducted with the books open at the reading lesson. Separate words should be examined by the pupils to ascertain what they mean; *groups of words* should be considered also. This practice will lead to a better knowledge of single words and a more complete understanding of the lesson. *Formal definitions should be avoided.* Let the pupils say something about it that will show that a word is understood, or let them use it in a sentence.

Elementary Sounds.—Instruction in this subject should

be given from the words of the reading lesson *with the books open.* Words containing combinations of sounds that are new to the pupils may be illustrated from the blackboard; then the pupils should be required to find the same combinations of sounds in words of the lesson. By this means the pupils will be trained to discover the pronunciation of new words in the reading lessons. For instance, when the pupils have been shown on the blackboard that there are but *three sounds* in *light*, and that *g* and *h* are *silent*, they can readily find in their reading lesson similar combinations, in such words as *night*, *sight*, *might*, *right*, *bright*, etc. In like manner when they learn the sound of *ch* in *child*, they can find the same sound in *chide*, *chair*, *chart*, *church*, *charm*, etc. When they discover that *e* is *silent* in *slate*, they will soon notice the *silent e* in *late*, *take*, *cake*, *make*, *rake*, etc.

The pupils should be taught to answer the following and similar questions relating to sounds of letters: *What* sound has *a* in *face?* In *chalk?* In *what?* *What* sound has *e* in *me?* In *they?* *What* sound has *o* in *school?* In *come?* In *door?* The answer to each of these questions should be given by *uttering* the sound. The teacher asks: *Which* sound *a* has in *that?* In *talk?* In *what?* *Which* sound *o* has in *school?* In *come?* In *door?* *Which* sound has *e* in *men?* In *they?* The pupil should answer—"Second sound of *a*;" "Fourth sound of *a*;" "Second sound of *o*;" "Third sound of *o*;" "Second sound of *u*;" "First sound of *o*;" "Second sound of *e*;" "First sound of *a*."

Punctuation.—The *names* of all the punctuation marks that occur in the lessons read should be taught, and the *uses* of the period, question mark, hyphen, and quotation marks should be illustrated. The time commonly spent

in teaching definitions of these marks is wasted. *Too much attention is paid to the comma*, and the result is faulty reading. Let the pupils be required to find question marks, to tell what *question* is asked in each case, and to find the *answer* to the question. Let them find hyphens that join two words, and hyphens that show that a part of the word is on the next line. Let them find quotation marks, and tell which words are quoted, and who said them.

Spelling.—Review familiar words of the Fifth Grade; add new ones; give the pupils exercises in writing words which they have learned to spell orally. The suggestions for the previous grade are generally applicable to this grade.

Object Lessons.—The general plan prescribed for the previous grades may be continued in the Fourth with more advanced steps. The fact that the pupils are to be trained in habits of observing and comparing, and in stating wherein resemblances and differences exist in the objects observed, should be kept in view by the teacher during the lessons of the entire grade.

Form.—In teaching a *new form*, the form should be shown, and the pupils be led to know its prominent peculiarities, to compare it with like and with unlike shapes, and to distinguish the differences between it and the unlike ones. They should, as far as practicable, be required to represent the shapes of *plane forms* thus learned, by cutting or folding paper, and of *solids*, by cutting potatoes, etc.

The *forms* of the preceding grades should be reviewed, and the following be added: different kinds of triangles, rhomb, rhomboid, crescent, prism, pyramid, and cone.

Color.—The pupils should be taught to distinguish and name the most prominent colors, including common shades

and tints; as, *crimson*, *scarlet*, *pink*, *yellow*, *lemon*, *blue*, *sky-blue*, *green*, *orange*, *purple*, *violet*, *lavender*, *brown*, *drab*, etc.

Specimens of each color taught should be shown the pupils; they should compare and match like colors and distinguish differences in color.

☞ See instructions in Sixth Grade.

Objects—their Parts, Uses, and Qualities.—The subjects of the preceding grades are to be continued in this, with appropriate additions. Attention is to be given to the *names* and *uses of the parts of objects* considered, and to their prominent *qualities*. If, for instance, a slate is the subject of a lesson, the pupil should name the sides or faces of the slate, the frame, the grooves in the frame, and the parts which fasten the frame together; he should state the uses of the faces of the slate, of the frame, of the grooves, and of the fastenings at the corners. A similar plan should be pursued with other objects.

The *qualities* should include such as are expressed by the terms *porous; slippery, sticky; brittle, tough; transparent, opaque; combustible, inflammable;* etc.

These qualities will be more easily remembered by the pupils if they are led to compare the opposite or distinguishing characteristics of those arranged in pairs, as indicated by the punctuation above.

☞ It should be remembered that *these qualities are to be illustrated* by the teacher, one at a time, and the pupils to be led to *observe the same quality in several objects, before the name of it is given.* Teach the children to notice that chalk, candy, glass, etc., *will break easily;* then give the name *brittle* to express the idea which has been gained by seeing several objects *break easily.* Pursue a similar course in teaching each quality.

In reviewing these lessons ask questions in different forms, as: *How* did the candy break? "Easily." *What* may you say of it because *it broke easily?* "It is brittle." *Why* do you say chalk is brittle? "Because *it breaks easily.*" *When* may you say a thing is brittle? "When it may be *easily broken.*" How can you find whether a stick is brittle? "Try if it will *break easily.*" By these varied forms of questions the pupils will associate *brittle* with the idea *easily broken*, so that they can give an intelligent and appropriate answer to any form of question about the quality.

ARITHMETIC.

Numeration and Notation.—Two periods are required in this grade. The three places of the *units' period* should be taught first, and so thoroughly, both by blackboard and slates, that the pupils can name each place in the period at sight, in order and out of order; and can write any number in it from dictation, before instruction with the period of *thousands* is begun. Two or three weeks may be spent on the period of units.

On commencing with the *period of thousands*, the pupils should be taught the *name* and *number* of each place in both periods, as *first*, *second*, *third* place for *units*; *fourth*, *fifth*, *sixth* place for thousands. This might be illustrated on the blackboard by writing a line of figures, thus: 654 321, leaving a space between the periods.

Require the pupils to name each place, as *first place* (units), *second place* (tens), *third place* (hundreds), *fourth place* (thousands), *fifth place* (tens of thousands), *sixth place* (hundreds of thousands); then to name it out of or-

der, as *thousands*, fourth place; *tens*, second place; *units*, first place; *hundreds of thousands*, sixth place, etc.

Begin *notation* by dictating numbers for the pupils to write, using at first only *two places;* as, 5 units and 2 tens; 2 units and 6 tens; 1 unit and 9 tens; 7 tens; 3 tens and 6 units. As the numbers are written the teacher may ask different pupils: *What figure did you write in the tens' place? What in the units' place?* Proceed in a similar manner to teach the writing of numbers through hundreds, or the *units' period.* Then change the form of dictation by saying: *Write one hundred and fifty-two.* Ask: *What figure did you write in the tens' place? What in the hundreds' place?* After sufficient practice with numbers in the first period, proceed with the second, or thousands' period, in the same way; first by naming one place at a time, then by giving the entire number, somewhat as follows: write 2 units, 6 tens, 7 hundreds, 1 thousand, 5 tens of thousands, 3 hundreds of thousands. Then dictate numbers out of order; as, 6 hundreds, 5 units, 2 tens, 4 thousands, 8 hundreds of thousands, 3 tens of thousands. Afterward dictate numbers as follows: write 419 thousand, 312; 9 thousand, and 1; 301 thousand, 806, etc.

Adding.—In the Fifth Grade, pupils added single columns on blackboard, and copied and added similar columns on their slates; begin in the Fourth Grade with dictating short columns of figures to be added on the slates. The column should gradually be made longer, until the pupils can add a column of ten figures, principally 6s, 7s, 8s, and 9s.

Teachers are particularly enjoined to keep in mind that *counting* is not *adding.*

Oral Drills in Adding.—In order to secure facility and accuracy in adding, pupils require training with special

reference to the various sums that may be produced by the combination of two digits. The desired result may be attained by proper attention to adding by *decades*. The "oral drills" are designed to furnish exercises for such training. The following arrangement will show the form in which the numbers may be placed on the blackboard, and will also show the meaning of the term decade as here employed:

2	12	22	32	42	52	62	72	82	92
2	2	2	2	2	2	2	2	2	2
4	14	24	34	44	54	64	74	84	94

2	12	22	32	42	52	62	72	82	92
3	3	3	3	3	3	3	3	3	3
5	15	25	35	45	55	65	75	85	95

5	15	25	35	45	55	65	75	85	95
4	4	4	4	4	4	4	4	4	4

In this way let all the numbers, from 1 to 9, be combined with numbers from 2 to 99. The combinations may be erased as fast as the pupils have learned them, and new combinations may be given. After they have learned them in the order of the decades, let new combinations be formed out of the order of decades; as,

5	14	35	44	7	27	76	86
4	5	4	5	6	6	7	7
9	19	39	49	13	33	83	93

By this means children can be led to observe that the sum of 9 and 7 always gives the unit figure, 6, whether

the numbers be 19 and 7, or 29 and 7, or 37 and 9, or 87 and 9; and that the same is true of any two digits. By attending to this fact, they can readily acquire the habit of *adding* (*not counting*), both rapidly and accurately.

When the pupils have made good progress in adding as described above, short columns of four or five figures each should be given them, for an application of the experience gained by these *drills*.

A few figures arranged in a circle on the blackboard will furnish a simple means of exercising the pupils in adding, each pupil in turn adding a single figure to the amount obtained by the preceding pupil.

Oral Drills in Subtracting.—The first lessons in subtracting should commence with counting backward, or "counting off" numbers, as introduced in the previous grades; but in this grade the numbers to be subtracted should extend to 6s.

The exercise in *oral drill* for adding *may be reversed* for teaching the pupils to subtract; as, 2 from 94, 92; 2 from 84, 82; 2 from 74, 72; 7 from 93, 86; 7 from 83, 76; 7 from 73, 66; etc.

By such exercises teach the pupils to observe that in subtracting, as in adding, the same digits always produce the same unit figure.

Multiplying by Two.—Continue illustrations with balls, splints, marks, etc., as in the previous grade.

Practical Questions.—Exercises should be given for *adding* concrete numbers silently; as, How many are 9 cents, 5 cents, 8 cents, 4 cents, and 6 cents? How many are 3 dollars, 7 dollars, 9 dollars, 6 dollars, and 4 dollars? How many are 12 pencils, 4 pencils, 8 pencils, 6 pencils, and 10 pencils? The teacher should give the numbers slowly at first, allowing the pupils time to add each; at a

signal from the teacher, let the pupils write on their slates the answer only.

For questions, without using slates for answers, ask: How many are 8 cents and 6 cents? *Ans.*—"14 cents." How many are 6 apples and 13 apples. *Ans.*—"19 apples." How many are 27 pencils and 6 pencils? *Ans.*—"33 pencils." How many are 15 dollars, 3 dollars, 8 dollars, and 6 dollars? *Ans.*—"32 dollars."

For *subtracting*, simple questions may be asked, using concrete numbers; as, If you have 8 cents and spend 3 cents, how many cents will you have left? *Ans.*—"5 cents." If you have 11 marbles and lose 5, how many will you have left? *Ans.*—"6 marbles." If you have 6 cakes and eat 3, how many will you have left? *Ans.*—"3 cakes." If you make 13 marks on your slate and rub out 5 of them, how many will remain? *Ans.*—"8 marks."

Exercises similar to the following may be employed with much benefit to the pupils. The teacher says: "Mary had 12 cents and lost 5." The pupil should say, "Mary had 7 cents left." The teacher says, "John has 12 cents and Jane has 6." One pupil says, "Both together have 18 cents." Another pupil says, "John had 6 cents more than Jane."

Roman Numbers.—In this grade the following key to Roman numbers should be explained to the pupils, and numerous applications of it made. By this means the necessity of memorizing the several combinations may be avoided.

First.—When letters representing equal values stand side by side; also, when a letter representing a smaller number stands on the *right*-hand side of one representing a larger number, the several values are to be added; as, II,

two ; XX, *twenty ;* XXX, *thirty ;* VI, *six ;* XV, *fifteen ;* LX, *sixty.*

Second.—When a letter representing a smaller number stands at the *left*-hand of one representing a larger number, the value of the *left*-hand letter is to be taken from the value of the *right*-hand letter. Examples : The value of I is taken from the value of V in the combination of IV, to represent *four.* XL represents *forty*, because *ten*, the value of X, taken from *fifty*, the value of L, leaves *forty.* XC stands for *ninety*, because *ten* taken from *one hundred* leaves *ninety.*

Whenever I or X is placed between two letters having a greater value its value is taken from that letter which follows.

Brief reviews of the application of this *key*, in determining the value of given combinations, with the addition of D and M, in Roman numbers for the other grades, will secure all the knowledge of this subject that is desirable.

SLATE-WRITING.

Exercises in slate-writing, similar to those of the Fifth Grade, should be continued, with more attention to words containing long letters, and lessons in writing short sentences on slates. Each pupil should be required to write his or her name.

The words written should be placed at a sufficient distance from the slate-frame, to allow proper freedom for the movement of the hand.

The pupils can be greatly encouraged by selecting each day several slates that show greatest improvement, and placing them in a position where the Principal and visitors may examine them. The Principal should take special pains to notice each slate thus selected.

THIRD GRADE.

Outline Course.

Language Lessons.—*Reading*—in a Second Reader: the *meaning* of words and phrases read: elementary *sounds* continued: *punctuation* continued: *spelling*—words from reading lessons, and other familiar words, orally and on the slate: lessons on *form* reviewed, and continued with proper additions; on familiar *objects* continued, to include objects outside of the school-room.

Arithmetic.—*Numeration and Notation*—through nine places: *addition*—columns of ten figures, including examples with concrete numbers: simple practical questions in addition and subtraction, to be worked *without slate and pencil: multiplication table*—through six times twelve: Roman numbers continued and reviewed.

Slate-Writing and Penmanship.—*On slates*—sentences continued; *on paper*—letters and short words without capitals.

Drawing.—On slates, illustrated on blackboard, from dictation and from chart: a regular hexagon; two or more symmetrical arrangements of straight lines in the square, hexagon, octagon, and equilateral triangle; two familiar *objects* without perspective effect, composed of straight lines.

Sewing.—In girls' classes.

Vocal Music.—Instruction continued, with the use of staff, clef, notes of different lengths, time, etc.

Physical Training.—Each half hour, from two to three minutes; attention to be given to ventilation.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

Reading.—Teachers will do well to read, at the outset, the instructions given for the Fourth Grade, especially those that relate to the *Conversational Exercises* about new lessons, and to the meaning of words.

The fact that the chief purpose of learning to read is to enable the reader to gain knowledge from books, should lead to the use of such methods in teaching as will most effectively develop in the pupils the ability to do this. In the order of proceeding, *the thoughts of the lesson* should receive attention first; *the manner of uttering the thoughts* should be attended to next: the former includes the meaning of sentences, phrases, and single words; the latter includes the sound of letters, pronunciation, inflection, emphasis, etc.

Require pupils to find groups of words that should be read together, and train them to read the thoughts represented by such groups. For this purpose lead them to ascertain first *what the phrase or sentence says* (*what thought it represents*); then to consider *how it should be spoken.* These or similar inquiries should be made by both pupils and teacher throughout each new lesson, and be followed by careful reading in accordance with the correct answers to these inquiries.

Meaning of Words.—As a practical mode of ascertain-

ing how well the pupils understand the meaning of a sentence, or of a single word, require a pupil to read the phrase or sentence in which the word occurs, substituting for it another word or a phrase, and require the class to notice whether the meaning of the sentence remains the same. The pupils may also be requested to use the given word in a new sentence.

Elementary Sounds.—Instruction in this subject should be continued in a manner similar to that described for the Fourth Grade. Teach the pupils to distinguish sounds of letters in words; as, *s* in his, was, rose, steps; *c* in cold, school, cent; *th* in thin, think, three, this, that, these; and to observe the sound of *gh* in cough, tough; *a* in what, any; *o* in for, short, come, does; and the silent letters in know, though, thought.

Attention may also be given to those diacritical marks that indicate the *first* and the *second* sounds of the vowels, the *k-sound* of *c*, and the *z-sound* of *s*.

Spelling.—In oral spelling the pupils should be required to pronounce the word after the teacher, to speak each letter distinctly, to *make distinct pauses between syllables*, and to pronounce the word again after the letters have been named.

Spelling is learned most thoroughly by writing the words, and therefore every lesson in spelling in this grade should be written by the pupils at least twice—once from copy and once from dictation. The list of familiar words taught in the previous grade should be reviewed, and new words should be added.

Object Lessons.—The instructions for the previous grades will suggest to teachers methods for conducting the object lessons of the Third Grade.

Form.—The forms of the previous grades are to be re-

viewed in this grade. These reviews should include the actual representation of the forms by the pupils (either by drawing them, or by making the forms out of paper or other appropriate material), and the naming of objects which possess the forms. Attention should also be given to the terms *circumference*, *diameter*, *diagonal*, *plane and curved surfaces*, and *face*, as a part of a surface. The teacher should carefully discriminate between a *form* and its *boundary*.

Objects—their Parts, Uses, and Qualities.—The methods of the preceding grades are to be continued in this; the observations by the pupils to extend to objects outside of the school-room, and to include *flowers*, *fruits*, etc., in their season.

The qualities should include such as are indicated by the terms *absorbent*, *flexible*, *pliable*, *elastic*, *compressible*, *liquid*, *solid*, *soluble*, *fusible*, *congealed*. The ideas of these qualities should be developed objectively and the pupils' experiences should be used for additional illustrations. Attention should be directed to those qualities that render the object most useful; as, in the sponge, *absorbent*, *compressible*, *elastic*—not opaque, combustible, etc.

ARITHMETIC.

Numeration and Notation are to be extended in this grade, so as to include nine places. The pupils should be taught to name either of the places readily, in order and out of order, and to write from dictation any number requiring not more than nine figures.

Lead the pupils to notice that each period—*units' period*, *thousands' period*, *millions' period*—contains the same

terms, and in the same order, and to designate the three places of these periods as units, tens, hundreds.

Notation.—The periods should be separated by a little more space than is usually left between the figures of a period; the spaces should not be made too wide. If marks are used for separating periods *they should not be made to resemble the decimal point.*

Addition.—As a first step in this grade, teach the pupils "to carry" the *tens* to the next column. For the first lessons give examples with two short columns only. As soon as the pupils understand the process of "carrying," gradually make the examples longer, and more difficult, by extending the length and the number of the columns. *Generally* give *more examples with a few long columns; seldom* with *many* columns.

N. B.—Special attention should be given to the use of practical examples with concrete numbers.

Adding without counting should continue to be prominent in the exercises for drilling the pupils.

The usual names of the answer in addition—*sum, amount*—should be taught in this grade; also the sign of addition, +.

For *Oral Drills* in *adding* and *subtracting*, and for *practical questions*, consult the suggestions for the Fourth Grade.

The following examples will suggest appropriate forms for answering questions for this grade:

If a coat cost $15, and a hat $5, how much will both cost? *Ans.*—Both will cost $20, which is the sum of $15 and $5.

Henry had 8 marbles and bought 4 more; how many marbles had he then? *Ans.*—Henry then had 12 marbles, which is the sum of 8 marbles and 4 marbles.

A boy had 9 apples and gave away 5 of them; how many apples had he left? *Ans.*—He had 4 apples left; because 5 apples taken from 9 apples will leave 4 apples.

The full form of the answer should be required only occasionally; in nearly all cases very brief answers should be given; as (in the examples above), $20, 12, 4.

Multiplication Table.—First illustrate the table by balls on the numeral frame, or marks on the blackboard.

(See suggestions in Fifth and Fourth Grades.)

The following forms, and their obvious connections and relations, will indicate the processes to be employed in this grade:

Two 2s are 4	3 times 2 are 6
Two 3s " 6	2 " 3 " 6
Two 4s " 8	4 " 2 " 8
Two 5s " 10	2 " 4 " 8
Two 6s " 12	5 " 2 " 10
Two 7s " 14, etc.	2 " 5 " 10, etc.

$3\times2=6$	$4\times2=$	$3\times3=$	$2\times4=$	$4\times4=$
$6\times2=12$	$3\times2=$	$5\times3=$	$3\times5=$	$4\times7=$
$9\times2=18$	$5\times2=$	$7\times3=$	$2\times9=$	$6\times4=$
$4\times2=8$	$9\times3=$	$3\times4=$	$3\times7=$	$4\times9=$
$7\times2=14$	$4\times3=$	$5\times4=$	$4\times8=$	$8\times2=$
$5\times2=10$	$6\times3=$	$8\times4=$	$3\times9=$	$3\times6=$
	$8\times3=$	$7\times4=$	$2\times7=$	$4\times5=$, etc.

New tables should not be presented before the pupils have learned thoroughly each preceding one through the different *forms*.

Roman Numbers.—See suggestions in Fourth Grade, for continuing and reviewing the subject.

WRITING.

Slate-Writing.—Exercises are to be continued in writing on slates, in accordance with the general directions for the preceding grades. Spelling and slate-writing may be combined for drill exercises in writing, after the necessary instruction as to the form of the letters has been given.

Penmanship.—Exercises in writing with pen and ink are to begin in this grade. Special pains should, therefore, be taken by the teacher to instruct the pupils as to proper positions for sitting, the manner of holding the pen, and the position of the hand and of the writing-book. As soon as practicable, let the pupils begin to write simple words (without capitals), the forms of which they have learned in slate-writing.

It is not necessary that the pupils should fill all the lines under each copy of the writing-book. Whenever they have made sufficient progress to be able to proceed with the next copy in order, let them go on with it.

SECOND GRADE.

Outline Course.

Language Lessons.—*Reading*—through Second Reader: the *meaning* of words and phrases read: elementary *sounds* in the pronunciation of words: *punctuation* marks: *spelling*, oral and written—words from reading lessons, and other familiar words: lessons on *form* reviewed, with appropriate additions; on familiar *objects* continued: exercises in *place* and *direction*.

Arithmetic.—*Written and mental—addition*, *subtraction*, and *multiplication* (multipliers not to contain more than two figures), with practical examples: *multiplication table* completed: tables of Federal Money, Time, Liquid and Dry Measures.

Slate-Writing and Penmanship.—On *slates*—sentences continued: on *paper*—continued, with capitals; each child to write his name.

Drawing.—On slates, illustrated on blackboard, from dictation and from chart: simple curves on vertical and horizontal bases of four inches, with altitude of one-fourth and of one-third of the base; symmetrical arrangement of simple curved lines in the equilateral triangle, square, oblong, rhomb, hexagon, and octagon, the sides of the triangle, square and rhomb being four inches; two or more familiar objects, without perspective effect, composed of the plane figures of this grade.

Sewing.—(In girls' classes.)

Vocal Music.—Instruction continued, as in previous grade; singing notes in groups, pupils to beat time.

Physical Training.—As in previous grades.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

Reading.—The general methods for the preceding grades may be employed in this grade, with such modifications as will adapt the instruction to the special needs of the pupils. Attention should be given to reading groups of words, phrases, and sentences so as to express the meaning clearly. *Emphasis* and *Inflection* must be taught chiefly by imitation ; and the pupil should be led to perceive how they aid in expressing the thoughts more clearly.

Should the teacher find her class using monotonous or other unnatural tones, several selections may be made of reading lessons that are composed chiefly of conversations. These may be used for training the pupils to read in easy, speaking tones.

As to the *amount of reading* which the class is taken over, two extremes should be avoided—that of keeping the pupils too long on the same lesson, and that of reading over many lessons without sufficient attention to the *matter* and *manner* of reading. The first extreme destroys the pupils' interest in this exercise, and prevents them from acquiring the habit of reading to gain information ; the second leads to carelessness in manner, and to the habit of reading without sufficient attention to the thoughts

expressed. When the class is able to read a lesson properly it should not be required to read it over and over again, although the pupils may not be able to spell all the words in it.

N. B.—Reading and the meaning of words should proceed together; the spelling exercises may be conducted separately.

Meaning of Words.—See suggestions in previous grades.

Lessons on this subject might be given in connection with slate-writing. During these exercises, faults of language should be corrected.

Elementary Sounds.—About five minutes, in connection with each reading lesson, will be sufficient to accomplish all that is desirable, if instruction in this subject has been properly given in the previous grades.

When the reader used renders it practicable, attention should be directed to the diacritical marks in the lessons read.

In conducting the exercises in sounds, care should be taken to train the pupils in habits of distinctness of enunciation, and in the use of smooth tones of voice: uttering the sounds of words separately will aid in securing distinct enunciation; and making the sounds with various pitches and different volumes of voice will aid in producing smooth tones.

Spelling.—It is intended that more attention shall be given to written spelling than to oral, in the Second and First Grades. The exercises should be conducted chiefly by dictation.

Words should be selected chiefly from reading lessons, and other common words should be added. The spelling of words taught in the preceding grades should be reviewed.

Object Lessons.—The reviews of the topics under this head *should not consist of mere repetitions of the lessons given in previous grades.*

Forms.—Continue as in previous grades, and add *radius, pentagon, hexagon, octagon, ellipse, oval, ovoid,* etc.

Objects—their Materials, Qualities, and Uses.—It will be observed that the *material* of which an object is composed is an additional matter for notice in this grade. Objects composed of *wood, iron, lead, copper, silver, gold, glass, stone, leather, cloth, paper, rubber, silk, cotton, wool, brick, sand,* etc., are suggested as suitable topics.

The additional qualities should include such as are indicated by the terms *fibrous, granulated; pungent, astringent; flavor, fragrant, odorous, aromatic; malleable, ductile.* In the examination of objects, *the pupils should pay chief attention to distinguishing those properties which give special value to the material, and adapt it to a particular use,* that they may discover and understand why different materials are used in making different objects.

Place and Direction.—This subject may be taught in the following manner:

First Step.—Train the pupils to observe and describe the position of objects on the table in front of them, using the terms right, left, front, back; and then of objects on the floor of the room.

Second Step.—Teach east, west, north, and south, and apply these in telling the location of familiar places.

Illustrate both steps by simplest diagrams on slate and blackboard.

ARITHMETIC.

Addition.—Continue the written exercises as in the Third Grade; also, the exercises for training the pupils to add without counting. Due use is to be made of practical examples with concrete numbers.

Subtraction.—The processes of subtraction are to be taught in this grade. These may be arranged in steps and presented in the following order:

First Step.—Give short examples in which each figure in the *subtrahend* represents a smaller number than the figure above it in the *minuend.*

Second Step.—Give examples in which it is necessary to transfer or "borrow" from a column of a higher denomination.

Third Step.—Give examples with *naughts* in the *minuend* which will make it necessary to transfer from the third or fourth place to the left.

Illustrate the *first* and *second steps* with sticks, by using single sticks to represent units, bundles of ten sticks to represent the tens, and bundles of a hundred sticks—or ten bundles of ten sticks—to represent the hundreds.

Illustrate the *second step* by cents, dimes, and dollars; also, show how to transfer from the tens by changing the dime to cents, or units; and how to transfer from the hundreds by changing the dollar to dimes, or tens. This process may be illustrated on the blackboard with examples similar to the following:

(1.)

4	*10*	*10*
~~$5~~	~~1~~ *d.*	2 *c.*
$2	5 *d.*	6 *c.*
$2	5 *d.*	6 *c.*

(2.)

4	*10*	*10*
~~5~~ *h.*	~~1~~ *t.*	2 *units.*
2 *h.*	5 *t.*	6 *u.*
2	5	6

(3.)			(4.)		
4	*10*	*10*	.	.	
5	*1*	2	5	1	2
2	5	6	2	5	6
2	5	6	2	5	6

It will be observed that in the above examples the first (1) represents dollars, dimes, and cents; the second (2), third (3), and fourth (4) represent hundreds, tens, and units. In the third example, the transferring of one of a higher denomination is represented by cancelling the figure and writing the remainder above it; while in the fourth example, the fact that one has been taken away is indicated by a dot only, over the figure from which it was taken.

The two following examples illustrate the process of subtracting when a *naught* occurs in the *minuend:*

		9					
5	*10*	*10*	*10*	.	.	.	
6	*1*	0	4	6	1	0	4
5	3	4	8	5	3	4	8
	7	5	6		7	5	6

In the above example the pupils might say, 8 from 14 leaves 6; 4 from 9 leaves 5; 3 from 10 leaves 7. This process prepares the pupils to understand readily the operations in "Compound Numbers."

The above and similar illustrations should be repeated until the process is understood; after which the actual cancellation should be omitted, and *dots* used. The use of *dots* over the minuend may be continued for several weeks; but neither of these devices should be used longer than is absolutely necessary.

The terms employed in subtraction, *minuend*, *subtrahend*, and *remainder* or *difference*, should be taught and used in connection with the examples for this grade; also the sign of subtraction (—) and that of multiplication (×).

Multiplication.—Examples to include those with *two figures* in the multiplier. The instruction may be given in four steps, as follows:

First Step.—Give examples in which no single product will exceed *nine*.

Second Step.—Give examples in which some of the single products will be greater than nine, making it necessary "to carry" to the product in the next column. Use for multipliers only single figures, such as 2, 3, 4, and 5.

Third Step.—Give examples in which the multiplicands contain one or more *naughts*, with multipliers from 6 to 12, inclusive.

Fourth Step.—Give examples with *naughts* in the multiplicands, and use for multipliers 13, 21, etc.; and teach the pupils *where to write the first figure in each partial product.* Subsequently, multipliers with other numbers of two figures may be given. As early as practicable introduce the short and proper method of multiplying by 10, 20, 90, etc.; and thereafter allow no other form to be used.

As illustrations, the following are given:

27	2,700
90	90
2,430	243,000

First illustrate each step on the blackboard, allowing the pupils to copy the same examples on their slates; then give them similar examples to do on their slates. Give

abundant practice to make the pupils familiar with each step before taking up the succeeding one. A well-taught class ought to master all of these steps in multiplication in four weeks.

The terms used in multiplication, *multiplicand*, *multiplier*, *product*, and *partial product*, should be taught before the pupils are promoted to the next grade.

Simple practical examples are to be given in addition, subtraction, and multiplication.

Mental Arithmetic.—Read carefully the suggestions on *practical questions* in the Third Grade. The questions should be more difficult than in the preceding grades. The following examples will suggest appropriate forms for answering questions in this grade:

A man paid $12 for a barrel of flour, $6 for a ton of coal, and $4 for a load of wood; how much did he pay for all? *Ans.*—He paid for all $22, which is the sum of $12, $6, and $4.

A farmer paid $50 for a cow, and sold her for $37; how much did he lose? *Ans.*—He lost $13, which is the difference between $37 and $50.

What will 6 oranges cost at 4 cents each? *Ans.*—24 cents: if one orange costs 4 cents, 6 oranges will cost 6 times 4 cents, which are 24 cents.

The rapid combination of numbers, mentally, should be made a special exercise at least once a week. In the drills for this purpose the teacher may dictate as follows: 9+6+7+8+6+5+9+8; write answer. 30−7−5−9; write answer. 23+4−5+3+7−8; write answer. The pupils will make the combinations silently, and write on their slates the answer only. The teacher may then ascertain how many are correct.

Multiplication Table.—Teach as directed for the Third

Grade, after which the entire table may be reviewed in the following form:

5×6 are 30	In 30 there are 5 sixes
6×5 " 30	" 30 " " 6 fives
5×9 " 45	" 45 " " 5 nines
9×5 " 45	" 45 " " 9 fives
6×7 " 42	" 42 " " 6 sevens
7×6 " 42	" 42 " " 7 sixes
8×9 " 72	" 72 " " 8 nines
9×8 " 72, etc.	" 72 " " 9 eights, etc.

When the pupils have become somewhat familiar with these forms on the blackboard, they may write them on their slates, using such numbers as the teacher may dictate.

The review should include questions similar to the following: Which is the greater, 3 nines, or 4 sevens? 4 nines, or 12 threes? 7 sevens, or 12 fours? 8 eights, or 7 nines? 10 fours, or 5 eights? 5 fours, or 10 twos? 5 fives, or 8 threes?

Common Tables.—The tables of weights and measures should be introduced by talks with the pupils about their experience in seeing them used, and by other familiar illustrations. The table of *United States Money* may be illustrated by the use of cents, dimes, and dollars; that of *Time* by the use of a clock dial, and by attention to days, weeks, months, and years; that of *Liquid Measure* by what the children know about buying milk, molasses, and kerosene, by the pint, quart, and gallon; that of *Dry Measure* by their purchases of fruits, nuts, and vegetables, by the quart, small measure, and peck.

After talking with the pupils about a given table, write it on the blackboard, and let the pupils repeat it; then let

them copy it on slates, both in the order of the table and in a different order. Continue the repetition and copying until the table is thoroughly learned.

TABLES FOR CLASSES OF THE SECOND GRADE.

United States Money.

10 mills make 1 cent.
10 cents " 1 dime.
10 dimes " 1 dollar.
10 dollars " 1 eagle.

100 cents are one dollar.
50 " " one half-dollar.
25 " " one quarter-dollar.
75 " " three-quarters of a dollar.

Liquid Measure.

4 gills make 1 pint.
2 pints " 1 quart.
4 quarts " 1 gallon.

Dry Measure.

2 pints make 1 quart.
2 quarts " 1 small measure.
8 quarts " 1 peck.
4 pecks " 1 bushel.

Time Measure.

60 seconds make 1 minute.
60 minutes " 1 hour.
24 hours " 1 day.
7 days " 1 week.
30 or 31 days " 1 month.
12 months " 1 year.
52 weeks " 1 year.
365 days " 1 year.
100 years " 1 century.

Days of the Week.

Sunday,
Monday,
Tuesday,
Wednesday,
Thursday,
Friday,
Saturday.

Seasons of the Year.

Spring,
Summer,
Autumn, or Fall,
Winter.

March, April, May, } are the Spring months.
June, July, August, } are the Summer months.
September, October, November, } are the Autumn, or Fall months.
December, January, February, } are the Winter months.

In reviewing these tables, the teacher may question the pupil somewhat as follows: How many hours make a day? How many days make a year? How many days make a week? How many weeks make a year? How many minutes make an hour? How many months make a year? Which is the shortest measure of time? Which is the longest measure of time?

How many quarts make a gallon? How many quarts in seven gallons? How many quarts make a peck? How many pints in five quarts? How many quarts in three pecks? Which is the more, one bushel or three pecks?

Simple questions in mental arithmetic may be given, with a view to a practical application of the foregoing tables.

WRITING.

Slate-Writing.—The exercises in writing on slates are to be continued in this grade. Pay increased attention to the use of *capitals*, *periods*, and *question marks*. When words are written in columns, in a spelling exercise, use capitals with the proper names *only*. Spelling on slates should be closely connected with the lessons on slate-writing.

Penmanship.—Writing with pen and ink is to be continued; the simple capitals to be included. Each child to be taught to write his name properly.

It is not necessary that the pupils should fill all the lines under each copy of the writing-book. Whenever they have made sufficient progress to be able to proceed with the next copy in order, let them go on with it—but there should be system in the progress: all the pupils in the grade should receive instruction relative to the same points, and write the same words simultaneously; thus all

will attend to the same thing at the same time, and proceed to a new lesson together.

Before leaving this grade, the pupil ought to be able to write simple sentences neatly with the pen; to write his own name and age; also the day of the month, and the year, in proper form.

FIRST GRADE.

Outline Course.

Language Lessons.—*Reading*—of the grade of an easy Third Reader: the *meaning* of words and phrases read: elementary *sounds* in the pronunciation of words: punctuation marks: *spelling*, as in the previous grade: lessons on *objects*, as in the previous grades, with more complete descriptions of objects; special attention to be given to those properties which fit the objects for their particular uses: *geography*, without text-books—points of the compass; location and direction of familiar places; elementary definitions; shape of the earth, and situation of the principal countries and bodies of water.

Arithmetic.—*Written and Mental.*—*Addition* and *subtraction* continued; *multiplication*—multiplicand not exceeding *six figures*, multiplier not exceeding *four figures*; *division*—divisors not exceeding 25; practical examples in the several rules: *tables* of Long Measure and Avoirdupois Weight, with review of previous grade; simple practical questions.

Slate-Writing and Penmanship.—On *slates*—brief descriptions of familiar objects: on *paper*—words with capitals; during the last half of this grade one lesson each week to be written from dictation.

Drawing.—On slate and paper, illustrated on blackboard, from dictation and from chart: quadrants with radius of two inches; design composed of straight and simple curved lines symmetrically arranged in the square, equilateral triangle, hexagon, and octagon; two ovate conventional leaves on axis of three inches.

Sewing.—(In girls' classes.)

Vocal Music.—Instruction continued as in Second Grade; teach the singing of simple tunes in the natural scale by numerals, syllables, letters, *la*, *la*, *la*, and by appropriate words

Physical Training.—As in previous grades.

Manners and Morals.—Due attention to be given in each grade to training pupils in right habits.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

Reading.—The instructions for teaching reading in the two preceding grades, are appropriate as suggestions for this grade. While chief attention should be given to such reading as will enable the pupils to gain the thoughts readily from the printed page, due attention should also be given to such elocutionary exercises as will increase the pupils' ability to speak those thoughts in such a manner that those who listen may understand them.

For the purpose of training pupils to gain knowledge by *silent reading*, require them to read a paragraph *silently*, and then to state the substance of what it contains.

As an exercise in language, allow the pupils to choose a familiar reading lesson, and to write from memory the substance of the lesson, chiefly in their own language. Require different pupils to read what they have written, and other members of the class to notice how their own statements differ from those read. Then the pupils may be allowed to correct their own statements, and to write the lesson again. An exercise of this kind may be given once a week, in place of the *reading* and *slate-writing* exercises. It would be profitable, also, for the teacher to vary this language exercise by reading a short, interesting story and requiring the pupils to write about it.

Meaning of Words.—Read carefully the suggestions given in the Third and Second Grades.

Elementary Sounds and Punctuation.—The suggestions already given for the preceding grades will indicate what ought to be done in these matters.

Such additional attention should be given to diacritical marks as will enable the pupils to ascertain by their aid how the given words in the Readers should be pronounced, and will prepare them for using dictionaries for this purpose.

Spelling.—More attention should be given to written than to oral spelling. Words may be dictated for the pupils to write on their slates; short sentences may be given for the same purpose; the pupils may be required to write in groups the names of kinds of food, of articles of clothing, of furniture, of tools, of occupations, of animals, of trees, of fruits, of things that may be purchased at a grocery, etc., etc. These exercises will enable pupils to learn the spelling of a large class of words in common use.

Object Lessons.—Through the instruction of the preceding grades the pupils will have become familiar with the forms, colors, qualities, materials, and uses of common objects, have learned the terms necessary to an intelligent description of them, and have been provided with suitable facts, to prepare them for practical lessons in language. It is intended that the pupils shall be taught in this grade how to use these facts in gaining a more complete knowledge of the materials, qualities, and uses of articles of food and clothing; also, how to gain appropriate information in relation to occupations, trades, productions, and articles of manufacture. To this end it is desirable that the classification of substances as *animal*, *vegetable*, and *mineral*

should n w be taught. Lead the pupil to observe that *animals have animal life, take food, grow, breathe, move from place to place by their own power, have feeling, and die;* that *vegetables have vegetable life, take food, grow, and die;* that *minerals have no life, take no food, do not grow, breathe, move, nor die.*

Animals and vegetables have organized parts—that is, parts adapted to separate and particular purposes; as, eyes, ears, hands, hair, nails, bones, muscles, blood; roots, trunks, limbs, wood, sap, bark, leaves, buds, blossoms, fruit, etc. Minerals have no such organized parts.

The pupils may also be taught that substances such as wool, hair, bone, and skin, which once formed parts of animals, etc., are called *animal substances;* that wood, bark, gum, and sugar, which once formed parts of vegetables, are called *vegetable substances.*

Objects are to be used, as previously, whenever they may be necessary to proper instruction: select chiefly those objects with which the pupils have some acquaintance by personal observation. In giving a lesson the following steps should be taken:

First. Find what the pupils already know about the object; notice and correct their wrong impressions.

Second. Teach them to examine the object systematically in learning its properties, uses, etc.

Third. Train the pupils to describe the object intelligently (stating its chief property, and its most important qualities and uses), and to give other interesting facts concerning it.

Topics for the Lessons.—The following list will indicate topics appropriate for lessons in this grade:

Apple, banana, fig, lemon, orange, peach, raisin; coffee, corn, ginger, nuts, pepper, potato, peanut, rice, salt, sugar, corn-starch, tapioca,

wheat; brick, cotton, calico, flax, glass, earthen-ware, India-rubber, leather, paper, silk, soap, wool; roots, buds, leaves, blossoms, fruit; camphor, chalk, coal, cork, copper, iron, lead, whalebone; baker, blacksmith, carpenter, dressmaker, farmer, grocer, hatter, mason, milliner, painter, printer, shoemaker, tailor; cat, cow, dog, duck, fish, goat, goose, hen, horse, sheep, etc.

It is *not* supposed that lessons will be given on all the above topics, nor that the teacher will confine the lessons to those in this list; but it is desired that the number of lessons shall be sufficient to teach the pupils such modes of observation as will prepare them for obtaining useful knowledge from surrounding objects. If right methods of conducting the lessons be employed, eight or ten subjects, embracing a suitable variety, will be sufficient to accomplish the purpose.

The general plan of proceeding with the lessons may be understood from the following points in the examination of the object:

What is it, *animal*, *vegetable*, or *mineral?*

Is it a *natural production* or *a manufacture?*

Where and *how* is it *obtained?*

What are the *chief occupations* or *trades* required *to obtain* or *to produce it?*

Which are *its most useful qualities?*

What are *its chief uses?*

What is its general shape?—its color?

Give a brief description of the object.

What is produced by the occupation of ——?

What does the ———— do?

In view of the great practical importance of the subject, the condition of the pupils, especially the boys, in relation to color-blindness and other defects of visual perception, should be carefully ascertained. For this pur-

pose, test the pupils' ability to distinguish and match *reds*, *greens*, and *purples*. Harmony of colors should receive attention, especially from the girls.

Geography.—The instruction of the Primary Course in geography is to be given without text-books. It is important that the first lesson commence with things known by the pupils through their personal experience. Attention may be directed—

First.—To the location, direction, and comparative distance from the school, of the streets in the immediate vicinity, and of a few important ones farther away; also, of familiar parks, depots, ferries, and of a few prominent public buildings and places, such as City Hall, churches, libraries, post-office stations, etc.

Second.—To the relative location and direction of places in the vicinity of the city. As far as possible the location of these places should be shown by an outline map of New York and vicinity, or by sketches on the blackboard.

During these lessons the terms *river*, *bay*, *island*, *ocean*, *strait*, etc., will be employed, and the meaning of these terms should be taught, with the aid of chart, map, blackboard, or other available objects.

The names and location of islands, rivers, oceans, etc., need not be taught at this stage of the lessons.

Third.—Extend the lessons about places, villages, etc., by means of the personal experience of members of the class, as obtained by their visits, excursions, and vacation travels. Let the places so mentioned be pointed out on maps. These lessons will prepare the pupils for understanding more clearly subsequent lessons about distant places.

Fourth.—In giving the pupils ideas of the *shape of the earth*, use marbles, balls, oranges, and the terrestrial globe.

Teach the location of different countries, islands, etc., *on the globe first.*

Fifth.—To assist the pupils in remembering the names and locations of the grand divisions, associate with the places, as they are pointed out on the globe and on the map, familiar people, animals, and productions, somewhat as follows: North America, the country in which we live; South America, the home of the monkey, and the place where Brazil nuts, cocoanuts, and India-rubber are obtained; Africa, the home of the Negro, the camel, ostrich, lion, and zebra; Asia, the home of the Chinese, of the elephant, the tiger, and the place where tea, pepper, cloves, and cinnamon grow; Australia, the land of the kangaroo; Europe, the home of the English, Irish, German, French, Italians, etc.

In a similar manner the names and locations of countries and other places may be learned; as, Greenland, the home of the white bear, and the waters around it, the home of the whale from the mouth of which whalebone is obtained; West Indies, the place whence we obtain oranges, bananas, etc.; Spain, the country where cork and raisins are produced.

The most important groups of islands, two or three of the largest rivers and prominent ranges of mountains, and a few of the largest cities of the world may be included in these lessons; also the cold and warm countries may be pointed out: *the boundaries and capitals of countries should not be taught.*

Care should be taken that the pupils do not obtain the false impression that, to travel from a place represented at or near the bottom of a map toward a place represented at or near the top of the map, one must *go up.* In leading the pupils to avoid this common error, point out the

course of the St. Lawrence River, and cause them to understand that its waters flow *down* toward the northeast, and *not upward.*

The relative direction and location of places may be easily illustrated by simple dots on the blackboard, and on slates.

ARITHMETIC.

Addition and Subtraction.—Continued and special attention should be given to teaching the *uses* of these rules by means of practical examples. It is expected that the pupils will have been taught so thoroughly before they are placed in this grade that each one will be able to add and subtract with facility, and with a good degree of accuracy; yet reviews of these rules should be had, with examples as above stated, at least twice each week.

Multiplication.—The simple processes of multiplication having been taught in the previous grade, the exercises given for this grade should be presented in steps, somewhat as follows:

First Step.—Use multipliers similar to the following: 120, 348, 5,630; multiplicands not to contain more than four figures.

Second Step.—Use multipliers similar to the following: 406, 9,030, 8,007; multiplicands not to contain more than five figures.

Pupils should be carefully trained to write *the first figure of each partial product under the figure used as a multiplier.*

☞ *Review each step with practical examples embracing transactions that come within the observation of the pupils.*

Division.—The idea of separating groups of objects and numbers into several equal parts having been illustrated with objects, etc., as an introductory step to division, the teacher should now proceed to show *the different ways by which division may be represented with figures.*

First Step.—Place upon the blackboard the following forms of division:

$$2)8 \qquad 2)\underline{8} \qquad 8\div 2= \qquad \frac{8}{2}=$$

Tell the pupils that each of these forms of writing numbers means that they are to find how many *twos* there are in eight; or, that the number 8 is to be divided into *two equal parts.* Let the pupils tell how many each part will contain; then write the number in connection with each example, as follows:

$$\begin{array}{l}2)8\\ \underline{8}\end{array}4 \qquad 2)\underline{8} \qquad 8\div 2=4. \qquad \frac{8}{2}=4$$
$$\quad 4$$

After repeating the four modes of representing division, with other numbers, require the pupils to copy each form on the slate, and to perform the division.

N. B.—Do not allow the pupils to say "divide two *into* eight." Eight is divided *by* two.

Second Step.—Proceed to *illustrate* the process of division by the *long division form*, using small numbers for the divisor. Use examples first in which each figure of the dividend will contain the divisor without a remainder, thus:

2)48(24	3)96(32	4)84(21
4	9	8
—	—	—
08	06	04
8	6	4
—	—	—
0	0	0

Third Step.—Give examples, with the divisor of one figure, in which remainders occur during the partial divisions, thus:

4)976(244	8)952(119	7)861(123
8	8	7
—	—	—
17	15	16
16	8	14
—	—	—
16	72	21
16	72	21
—	—	—
0	0	0

Fourth Step.—Teach "*short division*," first by working *the same example by both the long and the short form*, thus leading the children to see that one form is much shorter than the other, therefore may be called *short division*, and that the other, as appropriately, may be called *long division*.

The illustrations for any one of these *steps* need not occupy the time given to division for more than *one week;* and the time devoted to the *four steps* should not exceed that assigned to this portion of arithmetic for *one month*. When the divisor is less than 13, *do not allow the long division form to be used after the pupils understand the difference between the two processes.*

Fifth Step—Give examples with divisors from 13 to 25, to be worked by long division, the dividends varying from *four* to *six* figures, including the use of *naughts.*

Examples should be given with a *naught* in the divisor, and also (at the right hand) in the dividend; as, 30)4560: the pupils should be required to work such examples by short division.

Aim first to make the pupils *understand the process* of the rule; then *train them to be accurate;* and finally, *drill in rapidity.* Never attempt to gain rapidity to the neglect of accuracy.

As soon as the pupils understand the manner of doing the work in any rule, give practical examples: do not wait for either accuracy or rapidity before giving such questions.

☞ *The ability of pupils to work practical examples in the four simple rules, is the real test of their knowledge of this subject.*

Mental Arithmetic.—The forms for answering questions in addition, subtraction, and multiplication, in this grade, may be the same as in the Second Grade. Questions may also be introduced which may require both addition and subtraction for their solution, as:

Henry had 18 cents; he gave 2 cents for pencils, and 6 cents for a sponge; how many cents had he left? *Ans.* 10. Henry spent the sum of 2 cents and 6 cents, which was 8 cents. He then had left the difference between 8 cents and 18 cents, which is 10 cents.

The same example might be performed by the subtraction of 2 cents, and then of 6 cents.

Division.—The two following examples will illustrate forms of solution appropriate for mental questions in division:

How many tops at 3 cents each can be bought for 12 cents? *Ans.* 4. As many tops as 3 cents, the price of 1 top, is contained times in 12 cents, which is 4 times.

If 2 apples cost 4 cents, what will 1 apple cost? *Ans.* 2 cents. If 2 apples cost 4 cents, 1 apple will cost one-half of 4 cents, which is 2 cents.

Oral Drills for rapid combinations of numbers may embrace combinations with multiplication, addition, division, and subtraction. See also suggestions for oral drills in the previous grades.

Multiplication Table, reviewed as a *Division Table.*—In making this review the teacher may ask, How many *fours* in 20? How many *fives* in 30? How many *twelves* in 48? etc. The form of the questions may be changed to, In 40, how many *eights?* How many *nines* in 72? The teacher can easily change the form of this review so as to make it both practical and interesting.

Tables of Weights and Measures.—Review the tables of the Second Grade, and teach the following:

Common, or Avoirdupois Weight.	Miscellaneous Tables.
16 ounces make 1 pound.	12 things make 1 dozen.
8 " " 1 half pound.	144 " " 1 gross.
4 " " 1 quarter of a pound.	12 dozen " 1 "
100 pounds " 1 hundred weight.	12 gross " 1 great gross.
20 hundred weight make 1 ton.	20 things " 1 score.
2,000 pounds make 1 ton.	24 sheets " 1 quire of paper.
	20 quires " 1 ream.

Reviews.—After these tables have been thoroughly learned in order, the teacher should conduct brief reviews of the tables of both the First and Second Grades, by questions somewhat like the following:

How many inches in three-quarters of a yard? How many yards in one rod? How many rods in a mile? How many pounds in a half ton? How many pecks in twelve bushels? How many quarts in nine gallons? How many days in a year? How many months in half a year? Which is the longer, six feet or two yards? How many buttons

in a gross? How many sheets of paper in a quire? How many in half a quire?

Simple questions in mental arithmetic may be given, with a view to a practical application of the foregoing tables.

WRITING.

Slate-Writing.—Continue instruction in the use of capitals, the period, the interrogation mark, and the hyphen; the pupils should be taught that a syllable can never be divided. Exercises should be had in writing brief descriptions of familiar objects, and the substance of some previous lesson. The pupils of this grade should be trained in writing exercises from dictation.

Penmanship.—In addition to the exercises in the writing-book, occasional lessons should be given in copying sentences from the blackboard. During the last half of this grade, exercises should be given in writing from dictation.

DRAWING.

General Suggestions to Teachers of Primary Schools.

In all the grades particular attention should be given to the manner in which the children hold their pencils. Pencils should not be held as pens are; the farther the point of the pencil is from the end of the fingers, the better.

An active interest will be awakened and kept up by frequent illustrations on the blackboard, and by the use of forms and objects. The teaching should be from illustra-

tion on the blackboard, from dictation, and from chart. (Any printed copy may be considered a chart).

During the exercises from dictation, let the whole class work together, doing the same thing at the same time. Call pupils to the board often, and let them draw for the class. This practice will familiarize the pupils with drawing on a vertical surface, and will create and foster a spirit of generous rivalry. Exercises in drawing from memory something previously drawn from copy, will be found to be very valuable. All rudimental work should be done as rapidly as possible, and little or no erasing be allowed.

All class-teachers are earnestly advised to familiarize themselves not only with the requirements of the grade they teach, but also with those of the preceding grades. They will find that the more familiar they become with their work, the more interest will they take in it; and that the scholars catch the zeal of the teacher. On the subject of drawing, much valuable information may be obtained from manuals and teachers' guides, and from the larger works which can be found in our public libraries.

It should be borne in mind that skill is acquired through persistent effort and practice. Hence, all pupils should be encouraged to try and to keep on trying, no matter how unsuccessful they at first may be. Praise the efforts of the ambitious pupils, and the slothful will be aroused to greater exertion.

Special Suggestions to Teachers of Primary Grades.

SIXTH GRADE.

The drawing lessons in this grade should be short and be given daily. During the exercise do not allow time for erasing a line. Train the pupils in habits of neatness,

care, and readiness, by requiring them to draw promptly and rapidly. Remember that you are giving the children their first impressions as to the manner of doing this work, and that first impressions are especially important.

Illustrate the different positions of the straight lines by the use of a pointer, and call attention to lines and angles as seen in the frame of a slate, the edges of a book, etc., etc. In the drawing of straight lines many simple combinations can be made, so that each lesson shall be to a certain extent new, and yet give the special practice required. In the lessons on the different angles, introduce variety by making different arrangements of the angles; and, when drawing the letters, group them and make words.

The slate-pencils for drawing should be *long* and *well pointed.*

FIFTH GRADE.

The suggestions for the Sixth Grade are also applicable to the Fifth. Continue the training to form the habit of drawing without stopping to erase. In marking off inches on lines, care should be taken that the pupils' first practice should be as accurate as possible, in order that the eye may be trained to judge correctly of proportion and form. In the beginning, aids in measuring should be permitted in order to teach the *inch* and the accurate division of lines; but these exercises in measuring and division should be repeated in the same lesson without aids. In this way the eye, though unaided, will soon measure correctly.

In teaching the *triangles* and *square*, pursue the same course; first, with some aid which will insure accuracy, and then in the same lesson without such aid. An envelope, a slate-frame, a tin pan, etc., etc., will answer for objects to be drawn without perspective effect.

FOURTH GRADE.

Forms should be used in explaining the geometric figures in this grade. These may be easily procured by drawing the figures on card-board, and cutting them out. By the use of these forms the pupils will get a clear idea of what they are to draw, and interest will be awakened. For discipline let short exercises in dictation be frequently given. Insist upon rapid drawing; avoid erasing. The pupils will, by drawing, learn to draw.

THIRD GRADE.

Much improvement will be secured by drawing rapidly the same figures of different sizes. Different symmetrical arrangements of straight lines in the plane figures specified for this grade, should be shown to the class, by drawings on the blackboard.

SECOND GRADE.

The suggestions for the Third Grade are all applicable to this. The repetitions of the same figure in different sizes and proportion are especially recommended.

FIRST GRADE.

The requirements of this grade are comparatively light. The main difficulty will be found in the fact that drawing on paper is now commenced. Much care will be necessary on the part of the teacher in order to keep the pupils from making heavy lines, soiling the paper, etc. See that the pencils are held properly (General Suggestions), and that each line is drawn by all the pupils of the class at one and the same time; also that little or no erasing takes place.

GENERAL REGULATIONS.

RELATIVE TO PRIMARY SCHOOLS.

Size of Class.—No class shall contain more than seventy-five pupils; this is a very important restriction, and should be strictly observed by every Principal. (See "Seating Capacity," on a subsequent page.)

Progress of Classes.—Whenever it is found that a class has advanced further in one or two subjects of its grade than it has in others, the Principal of the school may direct the teacher to devote less time to the subjects in which the class has thus advanced, and to give more time to the subjects in which the class has made the least progress: provided, however, that the law prescribing the *minimum time* per week be strictly complied with. By this means the grade of the class may be equalized in all its studies.

The Course of Study for one grade must be completed and thoroughly reviewed, and the pupils *promoted*, before they can enter upon any part of the Course of Study of the next higher grade.

In each grade, certain subjects, such as Arithmetic, Spelling, and Object Lessons, may be profitably divided into four parts, to be assigned to as many successive months; the work of the fifth month to include a careful reconsideration of the essential points. This plan, if adopted,

will be understood not to supersede the "brief monthly reviews" specifically called for by the Course of Study.

Progress of Pupils.—It often happens that two or three pupils so far outstrip their fellows in a single month that it would be better, both for those pupils and for the class, to place these rapid learners in a class of the next grade above. For making these transfers of the most advanced individual pupils, some such system might be adopted as the following:

Announce to the class that at the end of each month, except the one preceding the examination for general promotions, two or three of the pupils who are found to have made the greatest progress will be promoted to the next class above. This would act as an incentive to progress upon the members of the class: it would also aid in keeping the upper classes full, and would tend to relieve the general crowded condition of the lower classes, in which most of the pupils admitted after the formation of the class are placed. (See "Promotions from Primary Schools," under *Duties of Principals*—page 114.)

Time Devoted to Recitations, Study, etc.—No class in the primary course should be required to spend more than half an hour, at one time, upon the same exercise.

The mind, as well as the body, needs rest. A change of subject, and a change in the manner of conducting class exercises, are necessary to furnish opportunities for rest during school hours.

Taking Books Home.—No books should be taken home, nor should lessons be given to be studied after school hours, in any class below the Second Grade.

Study at Home.—The two higher classes may be assigned *a short lesson* each day for study out of school; but such lesson should not be so long as to require a child of

ordinary capacity more than *half an hour* to learn it. *The chief object of these lessons should be to train the children in habits of study and self-reliance.*

Reviews.—In connection with each new lesson, such a review of previous lessons in the same subject should be had, as will cause the pupils properly to associate the facts previously learned and those of the new lesson.

Brief reviews of the lessons on each subject should be had on Friday of each week.

General reviews should be had at least once during each month. On these occasions the leading facts learned in previous grades should be included.

Sewing.—Instruction in sewing to be given to the female pupils of Primary Schools and Departments, in the Third, Second, and First Grades.

Vocal Music.—Instruction in vocal music shall be given to the pupils in every grade. The music used shall be such as is found in the books contained in the supply list of the Board of Education.

Physical Training.—The pupils should be exercised daily, in such a manner as to expand the lungs, develop the muscles, and impart an easy and graceful carriage to the body. Calisthenic exercises, to the utmost practicable extent, should be employed for the attainment of these objects. Let the windows be opened, both at the top and at the bottom, for two or three minutes, while the pupils stand and sit several times in succession, and also while they engage in other physical exercises. Due attention should be given to secure a good ventilation of the class-room, but all improper use of the windows and exposure of pupils to drafts while sitting must be carefully avoided. (See "Physical Education," page 14.)

Discipline.—The children *should never be compelled to*

sit without employment for the mind, the hands, or the body. As a means of preserving good order in the class, attract the attention of the pupils by introducing new subjects, by changing the manner of giving the lesson, or by allowing individual pupils to take a special part in the lesson exercises.

They should be taught cleanliness by being led to observe what it is to be cleanly; and to be truthful and obedient, by perceiving examples of these virtues; and to avoid all bad habits, by being led to look upon them with dislike. They should be led to do right by encouragement rather than driven to do so by fear. Judicious praise is more efficient than scolding. (See "Government and Discipline" for instructions.)

Manners and Morals.—Such instruction should be given daily to the pupils of all the grades as will foster a spirit of kindness and courtesy toward one another, a feeling of respect toward parent and teacher, and a love of cleanliness, order, law, and truth. (See "Moral Education," page 15; also "Government and Discipline," page 11, for instructions.)

Use of Pencils and Pens.—The pupils shall not be allowed to write with short pencils. Particular care must be given to methods of holding both pencil and pen, and to the position of the body while writing.

School Sessions.—The several schools shall be opened at nine o'clock A.M., and the sessions shall be continued until three o'clock P.M., with an intermission of one hour at noon, when the pupils may leave school. An intermission, not to exceed twenty minutes, may also be given during the morning sessions.

No school shall be dismissed, except by special authority of the Trustees, sooner than three o'clock P.M., except that

in case of very wet or stormy weather the Principal may detain the pupils in school between the hours of twelve and one o'clock; but in such cases the school shall be dismissed for the day at two o'clock P.M.

Meritorious pupils, as a reward, may be permitted to leave school one hour earlier on Friday of each week. In no case shall any school be dismissed before three o'clock P.M., except as provided in Section 64. (By-Laws, § 63, page 146, Manual 1883.)

Vacations and Holidays.—The vacations and holidays allowed in the schools in the several wards shall be as follows:

Every Saturday throughout the year; the day commonly known as Good Friday; the twenty-second day of February; the fourth day of July; any day appointed by the President of the United States or the Governor of the State for a public fast or thanksgiving, and the day thereafter; the twenty-fifth day of December, the second day of January, and the intermediate days; the thirtieth day of May; election day; the day next following any day above specified, when such latter day shall be Sunday, and the interval between the third of July and the second Monday in September. (By-Laws, part of § 63, page 147, Manual 1883.)

Reading the Bible.—All the schools of this city under the jurisdiction of the Board of Education shall be opened with reading a portion of the Holy Scriptures, without note or comment. (By-Laws, § 134, page 207, Manual 1883.)

Doors to be Unfastened.—And all modes of egress, including the visitors' doors, shall be left unfastened during school hours. (By-Laws, § 61, part of subdivision 2, page 138, Manual 1883.)

Pupils Must be Residents of the City.—No person other than an actual resident of the city of New York shall be allowed to attend the Normal College or any school under the control of this Board. A boarding and lodging, by a minor, within the city, who leaves the house of his or her parents in another State or county, merely to gain an opportunity to attend the Public Schools, does not constitute such minor a resident within the meaning of the statute.

Where a parent, residing in another State or in another county, sends his minor child to the city of New York for the temporary purpose of enabling that child to attend and receive the benefits of the Public Schools, in nowise parting with his control over such child, and intending that the child shall return to him as soon as that temporary process is accomplished, such child, although not returning to his parents, except at considerable intervals of time, is not a resident in the city of New York within the meaning of Section 35 of the Act organizing and regulating the free school system within the city of New York.

Cases will occur to which this rule may not be applicable to the facts; in such case, if the teacher has any difficulty in determining whether the child be a resident, it shall be referred to the Board. (By-Laws, § 127, page 200, Manual 1883.)

Ages of Pupils.—All children between the ages of five and twenty-one years, residing in the city and county, shall be entitled to attend any of the common schools therein. (Statute Laws, § 1051, page 36, Manual 1883.)

Vaccination.—No pupil shall be allowed to attend any school, nor shall any teacher be employed in the same, unless such pupil or teacher has been vaccinated.

Every Principal of a school shall require satisfactory evidence of such vaccination as a requisite for the admis-

sion, employment, or continuance of a pupil or teacher, and the Principal shall also enter in the register of the school the dates, as near as possible, of the respective vaccinations of the pupils and teachers, and shall co-operate with such agents of the Board of Health as may be authorized to visit the schools for the purpose of examining and vaccinating the pupils, and shall require a revaccination of all pupils ascertained by said agents of the Board of Health not to be fully protected by a former vaccination, and no pupil refusing to be so revaccinated, either by the agent of the Board of Health, or by the physician of the family to which he or she may belong, shall be permitted to attend any Public School until such requirement is fully complied with.

A certificate of any physician in good standing in his profession, stating that the pupil does not require revaccination, shall be accepted by the agents of the Board of Health in lieu of a personal examination. (By-Laws, § 130, page 205, Manual 1883.)

Contagious Diseases.—Whenever it becomes known to the Principal or teacher in charge of a school that a contagious disease prevails in a house other than a tenement in which a child or children attending the school lives or live, such child or children shall be immediatedly excluded from the school, and shall not be readmitted except as elsewhere in this article provided.

Whenever the Principal or teacher in charge ascertains that a contagious disease other than small-pox or typhus fever exists in a tenement-house, but on one floor only, a child or children living on another floor of the same house need not be for this reason excluded, but children thus situated must be questioned daily about their health and that of their respective families; and must be sent

home at the first symptom of illness, or the first intelligence of contagion in their families.

But if a contagious disease of any description exists on more than one floor of a tenement-house, or if the disease existing on only one floor be small-pox or typhus fever, all children living in the house must be promptly excluded from school.

Children excluded pursuant to the above rules shall not be again permitted to attend school—

In case of scarlet fever, until three weeks after the *beginning* of the last case, on the floor or in the house, according to whether the exclusion has applied to a floor or an entire house under the above rules.

In case of measles, until two weeks after the *beginning* of the last case, on the floor or in the house, according to the extent of the exclusion.

In case of diphtheria, until one week after the *termination* of the last case, on the floor or in the house, according to the exclusion.

In any case of scarlet fever, measles, or diphtheria, until a certificate of the Board of Health is produced, stating that the apartments, bedding, and clothing affected by the contagion have been properly disinfected.

If the disease be *small-pox* or *typhus fever*, children who have been in such a case excluded must not resume their attendance without producing a certificate from the Board of Health stating that it is safe for them to do so.

New scholars applying for admission, and living in houses or on floors where a contagious disease prevails, must be admitted or excluded in compliance with the above rules.

Principals and teachers in charge are required to communicate to the Clerk of the Board of Education any

information received by them relative to this subject and not known to be in his possession. (By-Laws, § 166, page 283, Manual 1883.)

Seating Capacity.—It shall be the duty of every Principal to reject all applications for the admission of pupils into any school or class whenever the room occupied by the same is filled to the extent of its seating capacity. In fixing the seating capacity of rooms, the following shall be a minimun allowance of floor surface and air space per pupil:

In the three lower classes of Primary Schools and Departments, five square feet and seventy cubic feet.

In the three higher grades, six square feet and eighty cubic feet.

In the four lower grades of Grammar Schools, seven square feet and ninety cubic feet.

In the four higher grades, nine square feet and one hundred cubic feet.

In the admission of pupils, those residing nearest to any school shall in all cases have the preference. All rejected applicants shall be sent to the nearest school having accommodations for them.

The seating capacity of each room in each school building (estimated in accordance with the provisions of this By-Law) shall be conspicuously posted in each room. (By-Laws, § 33, subdivision 14, page 103, Manual 1883.)

See "Size of Class," page 99.

License Necessary.—No person shall be permitted to perform service in any position as a teacher until licensed. * * * (By-Laws, § 25, part of subdivision 2, page 79, Manual 1883.)

Teachers to Report their Absence.—Any teacher absent from duty shall report promptly, in writing, to the Princi-

pal of the school, the cause of such absence, and state its probable duration, and any teacher wilfully making a false report shall thereby forfeit his or her position. * * *

No subordinate teacher, absent from duty, who fails to communicate promptly with the Principal, shall be excused for such absence, nor shall any teachers absent be excused except upon a report thereon by the Principal to the Board of Trustees of the Ward. (By-Laws, § 33, part of subdivision 8, page 99, Manual 1883.)

Female Teachers to Report Marriage.—Any female teacher marrying, shall report in writing her married name and address to the Clerk of this Board and Chairman of the Board of Trustess of the Ward in which she is employed; and any teacher failing to comply with this by-law within thirty days after her marriage, shall thereby forfeit her position as teacher, and all salary that may be due her from the time of her marriage. (By-Laws, § 33, subdivision 8; amended October 4, 1883.)

Time Occupied in Teaching.—It shall be the duty of every teacher to occupy the whole of each school session, or time for which the teacher is employed, in the purposes of instruction, or the making of entries necessary to be made at the time; and no assistant teacher shall draw a salary or receive compensation as a special teacher, if employed as such during the regular school hours. (By-Laws, § 33, subdivision 12, page 102, Manual 1883.)

Forfeiture of Position.—The situation of a teacher or janitor shall be forfeited for disgraceful or immoral conduct, incompeteney, or wilful violation of any rule or regulation of this Board; and no teacher or janitor so removed shall thereafter be employed in any school, unless the forfeiture be remitted by this Board. (By-Laws, § 135, page 208, Manual 1883.)

See, also, *Violation of the By-Law* relative to corporal punishment.

Corporal Punishment Prohibited.—No corporal punishment of any description shall hereafter be inflicted in any of the common schools. (By-Laws, § 44, page 119, Manual 1883.)

Violation of this By-Law.—It shall be the duty of every Principal, Trustee, Inspector, or Superintendent, when cognizant of the fact, to report to the Board of Education the name of any teacher who may have resorted to unusual punishments tending to inflict physical injury, or to evade the by-law abolishing corporal punishment in the schools under the control of the Board.

Any teacher found guilty of a violation of the by-laws of this Board, in regard to corporal punishment, shall be liable to a penalty of forfeiture from his or her salary of not less than five nor more than thirty days' pay, or dismissal from school, as in the discretion of the Committee on Teachers may be deemed just and proper; provided the action of the Committee be approved by the Board of Education. (By-Laws, § 44, page 119, Manual 1883.)

Experienced Teachers for Fifth and Sixth Grades.—The Fifth and Sixth Grades of the Primary Schools and Departments shall be under the supervision and instruction of teachers whose experience and capacity render them especially fitted for this duty. (By-Laws, § 33, subdivision 13, page 102, Manual 1883.)

Review of Studies to Precede Promotions.—Every examination for promotion to a higher grade shall be preceded by a thorough review of all the studies pursued in the grade from which said promotion is to be made. (By-Laws, § 154, page 262, Manual 1883.)

Credit Marks.—1. In every class of the Primary and

Grammar Schools the daily record of credit marks awarded to the pupils for regular and punctual attendance, and for excellence in deportment and in the several studies and exercises, shall be kept in the book known as "School Record No. 7."

2. In all of the Grammar Grades, and in the Primary Grades 1, 2, and 3, the daily maximum of credit marks for conduct shall be 10; for regular and punctual attendance, 10; and for each recitation or other exercise, 10. In awarding the credit marks, the various degrees of merit shall be indicated by 10 for "perfect," 8 to 5 for "imperfect," and 0 for "failure."

3. At the close of each calendar month, the product obtained by multiplying the whole number of recitations and other class exercises during the month by 10, added to the product of the whole number of school-days of the month by 20, shall constitute the standard number for that month. This number shall form the basis of all merit rolls, certificates of merit, and monthly reports to parents.

4. In the Primary Grades 4, 5, and 6, the daily maximum of credit marks for conduct shall be 10; for regular and punctual attendance, 10; and for all of the class exercises taken together, 10; the maximum of forfeiture for or during any one exercise being 2. The standard number for the month shall be obtained by multiplying the number of school-days by 30.

5. If extra credit marks are awarded for superior merit, they shall in no case be allowed to exceed ten per cent. of the standard number.

6. In no case shall credit marks earned for attendance, or for recitations or other exercises, be forfeited for misconduct.

7. In the column headed "attendance," each half day's attendance shall be marked separately.

8. When diaries are used, they shall be marked to correspond with the general class record kept as above directed.

9. Whenever it shall be satisfactorily shown by the certificate of the parent or guardian that pupils have been prevented from attending school in consequence of sickness or religious observances, their absence shall be excused without a forfeiture of the usual certificate of merit, and as far as possible without loss of class standing thereby. Such pupils are nevertheless to be considered as absentees. (By-Laws, § 128, page 202, Manual 1883.)

Incorrigible Pupils.—Any pupil found to be incorrigible, or persistently disobedient to and regardless of the rules and regulations prescribed for the government of the school or class, or of resisting the authority of the Principal or class teacher, or who, by a reckless depravity, may injure or demoralize the school or class, may be suspended by the Principal from the school.

It shall be the duty of the Principal of every school thus suspending a pupil, to give immediate notice thereof to the parent or guardian of such pupil, and also to report the same to the City Superintendent and the Chairman of the Board of Trustees of the Ward.

The parent or guardian of such pupil may, within ten days thereafter, appeal from the action of the Principal to the said Trustees, who shall thereupon investigate the matter, and report their action to the City Superintendent.

If no such appeal be taken, or if such appeal be dismissed by the Trustees, it shall be the duty of the City Superintendent to notify the Principal of every other school for the same sex, of the name of such suspended

pupil, and he or she shall not be admitted into the same or any other school until satisfactory proof of amendment on the part of such pupil shall have been furnished to the City Superintendent, whose certificate of the removal of the disability shall entitle any suspended pupil to readmission in the same or any other school.

The Trustees may require the transfer of any pupil suspended from one school to any other school under their management, if, in their judgment, they shall deem it beneficial or advantageous to such pupil. (By-Laws, § 44, page 119, Manual 1883.)

Pupils not to be Sent from School.—Pupils shall not be sent from the school premises, upon errands, during the school hours, except in cases of necessity or emergency, and with the consent of the pupil, and in such cases only by the authority of the Principal or Acting Principal, who only shall be authorized to send a pupil of suitable age and discretion, and shall record in a suitable book the name of the pupil so sent, with the date, the occasion, and the duration of absence. (By-Laws, § 65, subdivision 4, page 150, Manual 1883.)

Exhibitions.—No public exhibition requiring special preparation shall be given in any school or department, if at all, oftener than once during each year, except by permission of the Board of Trustees, and no public exhibition or entertainment shall be given outside the school building without the consent of the Board of Education. (By-Laws, § 156, page 263, Manual 1883.)

Gifts Prohibited.—No teacher shall make or contribute any gift to a school officer or superintendent, nor shall money or other things be in any case collected or taken from a pupil or teacher, for the purpose of presenting a gift or testimonial to a teacher, school officer, or superin-

tendent, or for any other purpose, unless previously sanctioned by this Board. (By-Laws, § 133, page 206, Manual 1883.)

Extra Compensation to Teachers.—No compensation shall be received by any teacher for instruction given in any school building, except the salaries paid by this Board. (By-Laws, § 133, part of subdivision 1, page 207, Manual 1883.)

See also "Time Occupied in Teaching," page 108.

Duties of Principals.

Shall Keep Register of Daily Attendance of Teachers.—It shall be the duty of every Principal to keep a register of the attendance of teachers, in which shall be entered daily the time of the arrival and departure of each teacher, and any absence from duty, with the reason of such absence. (By-Laws, § 33, subdivision 10, page 101, Manual 1883.)

Shall Report Absences of Teachers.—It shall be the duty of the Principal to report, without delay, all absences of teachers in his or her school, to the Board of Trustees, with a statement of the cause of each absence as far as known. (By-Laws, § 33, part of subdivision 8, page 99, Manual 1883.)

Shall Report other Facts.—The Principals of the several schools shall report to the City Superintendent, each month, such facts as he may require in relation to the attendance of teachers and pupils. (By-Laws, § 25, subdivision 5, page 80, Manual 1883.)

Suspension of Pupils.—It shall be the duty of the Principal of every school thus suspending a pupil to give immediate notice thereof to the parent or guardian of such

pupil, and also to report the same to the City Superintendent and the Chairman of the Board of Trustees of the Ward. (By-Laws, § 44, part of subdivision 1, page 119, Manual 1883.)

School Sessions Omitted.—A special report from the Principal of each school shall accompany each pay-roll, stating whether or not the whole or a part of any session of such school has been omitted previous to the date of such report, and subsequently to the last preceding report, other than such vacations and holidays as are specially allowed by the By-Laws of the Board of Education; and if the whole or a part of any session has been so omitted, for what reason, and by what authority the same was omitted. (By-Laws, § 65, page 148, Manual 1883.)

Principals may Visit other Schools.—The Board of Trustees of any ward may, however, permit any Principal therein, who may apply therefor, to absent himself or herself from his or her department or school, without loss of pay, for a period not exceeding three days in any one year, for the purpose of visiting other schools in the city, but such absence shall be reported, as required by the succeeding subdivision. (By-Laws, § 33, subdivision 7.)

Provide Statement for Examiner.—Whenever any school is visited for examination by the City Superintendent, or his assistants, it shall be the duty of the Principal of said school to provide the examiner with a statement showing the number of pupils on record in the class, the length of time in it, their age, the studies pursued, the progress of the pupils therein, and such other facts as he may deem requisite to enable him to form a correct estimate of the efficiency of the instruction imparted. (By-Laws, § 162, page 265, Manual 1883.)

Promotions from Primary Schools.—Promotions shall

be made from the Primary to the Grammar Schools semi-annually, and not oftener, except by the written permission of the City Superintendent; and no pupil shall be promoted from any Primary School *unless examined in all the studies prescribed for the First Grade of the Course of Instruction for Primary Schools*, and found qualified by the Principal of the Department into which the promotion is to be made; and when found qualified, such pupils shall be promoted without delay.

Pupils may be transferred from the Primary to the Grammar Schools before completing the First Primary School Grade, with the consent of the Committee on Course of Study and School Books, and on the recommendation of the City Superintendent, to whom application may be made by the Trustees in any ward, showing that said transfer is necessary in order to relieve the crowded condition of any Primary School, and to fill vacancies in the classes of the Grammar School. Pupils thus transferred to any Grammar School shall, however, be taught in the Primary Grade until regularly promoted from the same, but may be counted as a part of the regular attendance of the Grammar School. (By-Laws, § 149, page 243, Manual 1883.)

Pupils Leaving School between the Ages of Eight and Fourteen.—The Principal of every school shall transmit to the City Superintendent, hereinafter mentioned, at the close of each week, a list of children between the ages of eight and fourteen years, who, such Principal shall have reason to believe, have left the school for the purpose of engaging in any employment.

It shall be the duty of the Principal of every school to report to the Agent of Truancy, for the district in which such school is situated, the names of all children between

the ages of eight and fourteen years, and those only, whose non-attendance at school, such Principal has reason to believe, is the result of a truant disposition. (By-Laws, § 144, subdivisions 3 and 5, pages 220 and 221, Manual 1883.)

Keep Record of Truants between Ages of Eight and Fourteen.—It shall be the duty of the Principal of every school to keep a record, in a register especially provided for that purpose, of all children between the ages of eight and fourteen years, who have been reported to the Agents of Truancy hereinafter mentioned, for a violation of the said Act of May 11, 1874, as amended May 28, 1876, together with an accurate record of the disposition made of each case by said Agent of Truancy, when reported by them to said Principal.

It shall also be the duty of said Principal, when an Agent of Truancy shall bring to a school any child, between the ages of eight and fourteen years, not registered as a pupil of said school, to enter his or her name upon said special register, and to note upon said register any facts relating to said child that may have been communicated to said Principal by said Agent of Truancy. (By-Laws, § 144, subdivision 1, page 219, Manual 1883.)

Keep Register of Residence of Parents, etc.—It shall be the duty of every Principal, on the reopening of the schools in September of each year, to ascertain and register the residences of the parents or guardians of each and every pupil attending or applying for admission to the school. (By-Laws, § 65, subdivision 2, page 149, Manual 1883.)

Keep Record of Children Refused Admission.—The Principal of each school and department under the jurisdiction of the Board of Education shall be required to keep

a record of all children who are refused admission, and the names, ages, and residences of the same shall be inserted in the monthly report made to the City Superintendent. (By-Laws, § 65, subdivision 3, page 149, Manual 1883.)

Drills for Rapid Dismission.—The Principals of the several schools and departments shall, under the direction of the City Superintendent, instruct and train the pupils by means of drills, so that they may, on a sudden emergency, be able to leave the building in the shortest possible time and without confusion or panic. (By-Laws, § 25, subdivision 6, page 80, Manual 1883.)

Shall Examine Classes and Report.—The Principals of the schools shall examine all their classes in the prescribed branches of study at least twice a year, namely, immediately before each regular promotion, and record the results of the same in a book kept for that purpose. A report of all such examinations shall be sent to the City Superintendent, who shall have it recorded in a book kept for that purpose. The adjectives to be used by the Principals in such examination shall be the same as those made use of by the Superintendent under these by-laws. (By-Laws, § 161, page 265, Manual 1883.)

Ascertain that Teacher has License.—It shall be the duty of the Principal of each school to ascertain that every subordinate teacher has received a proper license before such teacher shall be assigned to any duty. (By-Laws, § 25, part of subdivision 2, page 79, Manual 1883.)

Employ Medical Service in Case of Accident.—The Clerk of the Board shall furnish the Principals of the Public Schools in the several wards with a correct list of the names and residences of the Police Surgeons and Health Inspectors living nearest to such schools respectively, with instructions that in case of accidents said

Principals shall send for and ask the medical officers herein named for such aid as the necessities of the case may require, and in case of the absence of such officers, the Principal of the school where the accident happens is empowered to employ the services of the first available medical practitioner at the expense of this Board. (By-Laws, § 129, page 204, Manual 1883.)

Pupils not to Purchase Supplies.—The Principal of the school shall procure from the depository, and furnish each pupil with the books, slate, and other supplies required to be used by such pupil; and no pupil shall be requested or required to purchase any book or other article of supply.

School Supplies—Inventory.—When supplies of any kind are needed for any school, they shall be plainly entered in the pass-book provided by the Committee, and the list shall be dated and attested by the signature of the Principal, and countersigned by the proper officer or committee of the Board of Trustees authorized for the purpose.

An accurate inventory shall be made, during the last week in each year, of the books, slates, maps, and all other articles usually embraced under the name of supplies, in every school within the jurisdiction of the Board of Education—blank forms of inventory being furnished by the Clerk for the purpose—the same, when completed, to be forwarded to and filed in the Clerk's office.

The inventory shall designate the three conditions of supplies on hand, in separate columns, viz., Good, Half-worn, and Old. In estimating the stock on hand, the whole of the class "Good" shall be entered on the list, one-half of the class "Half-worn," and one-fourth of the class "Old," the total being the quantity on hand of each item. (By-Laws, §§ 122 and 123, pages 193 and 194, Manual 1883.)

Admission of Pupils to School Building, and their

Supervision.—It shall be the duty of the Principal of the school to make provision for the admission of pupils into the building at 8.40 A.M., and on stormy mornings at 8.20; and also to provide suitable supervision of the playgrounds, by one or more teachers, while the pupils remain in the yard.

It shall be the duty of the Principal to make the necessary inspection to ascertain that the school-rooms, yards, etc., are kept in a cleanly condition, and to report in writing to the Board of Trustees any neglect on the part of the janitor, and to report in writing repeated subsequent neglect to the City Superintendent.

Order of Exercises.—In arranging the order of exercises of any Primary School or Department, the minimum time per week shall be as follows: Language lessons, six hours; arithmetic, four hours; writing, two hours; drawing, thirty minutes; geography (1st grade), thirty minutes; sewing (1st, 2d, and 3d grades, girls), one hour.

Opening exercises, fifteen minutes; morning recess, grades 6, 5, and 4, twenty minutes; grades 3, 2, and 1, fifteen minutes; noon intermission, one hour. The remaining time per week may be distributed at the discretion of the Principal. Opening exercises to commence punctually at nine o'clock A.M., and dismissal at three o'clock P.M. Primary Departments may commence to dismiss at 2.50 o'clock P.M. No class exercises shall take place before nine o'clock A.M., or after three o'clock P. M.

Duties of Janitors.

During School Hours.—It shall be the duty of the janitors to remain in the school buildings, or adjacent grounds, during the whole time the schools are in session,

and be at all times ready to render personal assistance in case of any emergency.

* * * * * * * *

Report to Principal.—They shall also report in person to the Principal of each school at each and every daily school session; and they shall also ascertain, on the first day of every month, by the index of the gas-meters in their respective schools, the amount of gas consumed during the preceding month, and report the same in writing to the Clerk of the Board of Education, who shall keep a record of the same.

It shall be the duty of all janitors who reside on the premises to leave some responsible person in charge during their occasional absence.

Janitors who do not reside on the premises must visit the school building for a sufficient time on each day when the schools are not in session; but in no case should their place of residence be further than five hundred yards from the school premises, unless permission be given by the engineer to the contrary, and all such permissions given by him to be reported to the Board for its approval.

Responsible for Security of Buildings.—All janitors will be held responsible for the security of the school buildings, by locking or otherwise securing all doors, gates, windows, and other means of access. They must also report immediately, to the Trustees or Principal, any damage that may happen to any part of the school property. (By-laws, § 61, subdivisions 2 and 3, page 138, Manual 1883.)

Teachers' Manual.—If adopted by said Board, it (*The Teachers' Manual*) shall become valid as a rule for the government of teachers in the discharge of their duties, except so far as its provisions are inconsistent with the By-Laws of the Board. (By-Laws, § 28, subd. 5, p. 88, Manual 1883.)

COURSE OF INSTRUCTION IN VOCAL MUSIC.

PRIMARY SCHOOLS.

SIXTH GRADE.

As this grade consists of the youngest children, great care should be taken that they acquire a good, pure tone, avoiding all harsh sounds, etc. The exercises should be of the simplest character, the children learning to use musical sounds before being taught the signs used to represent them. Therefore, it is appropriate to teach the pupils to sing the first three sounds of the scale in order, by numerals, as: 1, 2; 1, 2; 1, 2, 3; 1, 2, 3; 1, 2, 2; 1, 1, 1, 2, 2, 3, 3; 1, 2, 3; 1, 2, 3, 3, etc. The teacher should sing the exercises first, and then have the pupils repeat them.

After they have thoroughly learned the scale thus far, let them proceed to *fa*, and so on to *sol* (the fifth) of the scale, but not beyond it in this grade, although, when the children's voices admit of it, the whole scale may be sung for the purpose of illustration.

The children should sing with both loud and soft tones, and should be required to sing separately as much as possible. A few rote songs within easy compass of the children's voices may also be taught.

As the exercises of this grade are exclusively designed to train the pupils to distinguish musical sounds, and to

cultivate the voice so as to produce them, no attention need be given to the staff, or to any other musical signs.

FIFTH GRADE.

Explain the use of notes as the signs of musical sounds; and of the staff, in representing which notes are to be sung low and which higher. Give the simplest idea of time, using the whole and the half note to represent respectively a long sound and a short one. Use one added line below the staff. Teach the children the position of the notes on the staff, and also teach them to sing the scale, ascending and descending, with numerals and syllables; then teach them to sing different combinations of the scale, with some of the sounds repeated two or three times in succession, as: 1, 1, 1, 2, 2, 3, 3, 3, 2, 3, etc. Sing these combinations of sounds with syllables also.

After the class is well instructed in singing with syllables, *la* may be used for all the notes of the exercises. Exercise the children in singing with smooth, pure tones; also, with loud and soft tones. The individual singing of the children must not be neglected in these exercises. Teach two or three simple rote songs.

FOURTH GRADE.

Review the instruction previously given upon the staff. Drill in exercises similar to the following, with numerals and syllables: 1, 2, 3, 3, 2, 3, 2, 3, 2, 1; 3, 2, 3, 4, 5, 4, 3, 2, 1, 2, 1, 1, etc. No further intervals than seconds need be used in this grade.

The teacher may write an exercise on the blackboard, and request the pupils to copy the same on their slates. Let the class sing the exercises from the slates. The exercises of this grade may commence on any note of the scale.

THIRD GRADE.

Teach the use of the clef. Explain the use of the whole, half, and quarter notes; and also the use of a hold, bar, measure, and time. Teach the children to beat 2-4 time, being very careful that the beats are correct, and that they are not hurried. Continue this practice of beating the time until the pupils are acquainted with it. Review what has already been taught, and add exercises containing no further intervals than thirds, such as the following: 1, 2, 3, 3, 1, 3, 1; 1, 2, 3, 1, 3, 1, 3; 1, 2, 3, 2, 3, 4, 3, 4, 5, 5, 4, 3, 2, 1.

The teacher should remember that the definitions, and descriptions of notes, staff, clef, bars, and other musical signs, are to be given only in explanation of the uses of the signs and of that which they represent.

SECOND GRADE.

Teach the children to beat triple time. Exercises should not be sung which embrace more notes than the octave from C below the staff to C in the third space, but should include every variety of time thus far taught.

Review and extend drills for making the pupils familiar with the different sounds of the scale, with intervals, skips, etc., using alternately numerals, syllables, and letters. Also call upon the class to sing from dictation, as: 1, 1, 2, 3, 3, 1, 3, 4, 5, 5, 1, 3, 5; 1, 3, 5, 8; 8, 5, 3, 1, 5, 8, 5, 1, 2, 1, 1, 2, 3, 4, 4, 1, 4; 1, 2, 3, 4, 5, 6, 1, 6, 1, 6.

Drill in singing with loud and soft tones alternately; also let the singing of one measure be loud, and then of another soft. In this grade the class may learn to sing simple tunes by note, then to sing the same with appro-

priate words. Special attention should be given to the expression.

Continue to exercise the pupils in singing alone. Select the best singers to sing given notes, as *do*, *mi*, *sol;* then let the class imitate. Pupils may copy exercises written in numerals by writing the notes on a staff. They may write in numerals an exercise given in notes, and then sing the same from their slates.

FIRST GRADE.

Explain 4-4 time; and continue to practise the scale promiscuously, as: 1, 3, 5, 7, 8, etc. Practise exercises in 3-4 and 4-4 time alternately. Great care should be taken to insure correct intonation, and to prevent all boisterous or harsh singing. Require smooth, pure tones, and loud and soft tones. Review all that has been taught in the other grades. Practise the entire scale as follows: 1, 2, 3, 1, 3, 1, 3; 1, 2, 3, 4, 1, 4, etc.

Teach the singing of simple tunes in the natural scale by numerals, syllables, letters, *la*, *la*, and by appropriate words. Give attention to accent, singing phrases, and the proper expression, and continue the writing of musical exercises on the slate, as in the previous grades.

Rules Relating to the Posture of the Body and the Position of the Mouth.

The singer should stand upright, letting the body rest upon both feet, the heels just touching each other. Throwing the weight upon one foot is to be avoided, because it forces the body into a curved and inelegant position, and causes tones produced to be wanting in precision.

The arms should neither be fixed rigidly by the side nor be folded across the chest.

The head should be held easily erect.

The shoulders should be thrown back, the chest inflated, and the abdomen somewhat drawn in so as to allow the lungs fully to expand.

The mouth should be opened wide enough to admit the passage of the thumb in its breadth between the front teeth. The jaws should be held one exactly above the other, and the tongue be allowed to lie flat in the mouth, before any attempt to sing is made. This position of the organs in question should be assumed, lest the nasal sound of *n* become audible; and it must not be altered during the continuance of a tone, for by every such change the tone is modified.

Beware especially of any distortion of the countenance.

The Breathing.

The management of the breath in singing is of the greatest importance; for upon the manner and regularity of the singer's breathing depend the formation of the tone and the successful rendering of the musical phrases and of the text.

The breathing should be done inaudibly. The pupil should be especially instructed in the art of producing prolonged tones at as little expense of breath as possible; at first with soft tones, with loud tones afterward.

Breath may be taken at any point where the meaning of the text and the connection of the melody will not be interrupted; therefore, after pauses or punctuation marks; at the completion of a musical group; before long notes; before the last or after the first beat of a measure; or, in

other words, after the accented beats. The latter direction is given, because at such points a better conclusion of the melody is possible. It is a rule of the first importance that breath be not taken at a bar; that is, after an unaccented beat. An exception to this rule is made only when the rhythmic structure of the melody, or the punctuation, demands it.

The time that is needed for breathing never is to be taken from the tone *before*, but from the tone *after* which breath is drawn. For instance, if the tone after which one breathes is represented by a quarter note, it is sung as an eighth note, the other half of its value in time being used for breathing.

As the singer should always have a good supply of breath on hand, prudence demands that he should not only use his breath economically, but that he always should take breath wherever, according to the foregoing rules, he is permitted to do so; for if he do not, he may be forced to breathe when the rules forbid it. Neglect of this wise precaution is apt to force the singer to "press" the tone, whereby it receives a languid, thin, uneasy coloring.

After one long, full breath has been taken, it is well that the subsequent breathings be short or medium in length; otherwise the lungs may become fatigued. It is, perhaps, needless to add that the physical constitution and the age of the singer must always be taken into consideration.

Pronunciation.

The pronunciation of the words of the text must be clear and correct. A distinct enunciation is of great im-

portance in singing; for upon a clear utterance of the vowel sounds depends the beauty of the tones, and upon a distinct pronunciation of the consonants depends the hearer's understanding of the words of the text.

Musical accent or rhythm is simple or compound. Double time and triple time are forms of simple rhythm, in each of which the first beat is accented. Double time gives origin to quadruple time; triple time to sextuple, 9-8, and 12-8 time.

Expression depends upon the choice of the right tempo and pitch, the proper degree of loudness, and upon correct declamation.

In singing, beware of dragging and shouting. The initial tone must be given precisely, even in piano passages. The sliding of the voice in search of the right tone is not to be tolerated. The singing must pour forth as from a single mouth.

Gloomy weather causes the spirit to flag, and makes every exertion a burden; the judicious teacher will take this into consideration in determining the possibilities regarding correctness.

APPENDIX.

COURSE OF INSTRUCTION PRESCRIBED FOR GRAMMAR SCHOOLS.

EIGHTH GRADE.

Outline Course.

1. Language Lessons.—*Reading* of the grade of a Third Reader: *oral lessons* on the qualities and uses of familiar objects, such as articles of clothing, food, materials for building, and so forth: *compositions* upon subjects connected with the oral lessons of the grade: *spelling*, *meaning*, and *use* of words, chiefly from the lessons of the reading book, and from the oral lessons of the grade; also selected miscellaneous words in general use, at least 150 in number, to be taught chiefly by writing them separately, and in short sentences from dictation.

2. Arithmetic— *Written and Mental.*—Through the simple rules and Federal money, with practical examples. *Tables* of weights and measures to be taught, with simple practical applications.

3. Geography (without text-book).—The World: from globes and outline maps.

4. Penmanship.— *Words* of various length, presented in the order of their difficulty. Practice in *capitals* continued.

5. Drawing.—On paper, illustrated on blackboard, from dictation and from chart.

Draw semicircles on vertical and horizontal diameters of four inches. Bi-symmetrical arrangements of simple and compound curves on vertical axis, two of each. Two simple historic borders, illustrating horizontal repetition of a unit. Two conventional cordate leaves; symmetrical arrangement of these leaves in the equilateral triangle and the octagon.

INSTRUCTIONS AND SUGGESTIONS.

LANGUAGE.

READING.

General Suggestions for all Grades.

1. The number of reading lessons should bear a reasonable relation to the time the pupils have been in the grade. No selection, other than the best English poetry, should be so long dwelt upon and so frequently repeated as to render the exercise a mere recitation.

2. Should a large number of consecutive lessons in the Reader be of the same general character, a part should be omitted, so as to give variety of style and subject.

3. Where two or more classes are in different parts of the same grade, and use the same Reader, care should be taken to have a corresponding difference in their reading lessons.

4. Distinctness of articulation and the avoidance of all improper clipping of terminations, and of the omission or slurring of syllables, should receive careful and constant attention.

5. New and difficult words should be carefully pronounced and explained before the piece or paragraph is read by the pupils.

6. Where diacritical marks are used in the Reading Book the pupils should be taught to understand and apply them.

7. Lists of common words liable to be mispronounced, such as *length* and *strength*, should be made by the teacher, and the class be exercised upon them. The elementary sounds, and their more difficult combinations in words and phrases which require great mobility of the vocal organs (especially *final consonants*), should receive frequent attention. Particular attention should be given to pupils of foreign birth or parentage, so as to insure their mastery of the principal difficulties of English pronunciation.

8. Pupils should read only such selections as are within their ready comprehension, and should be accustomed to state, in their own language, the important facts, principles, and moral lessons therein taught. Words, phrases, or allusions should be briefly explained whenever necessary for the proper understanding of the piece read.

9. The voice and manner of the pupil should accord with the character and sentiment of the selection. All drawling, sing-song tones should be prevented. This is easily done when the pupils are led to understand and enter into the spirit of the piece.

10. At least once a week it is expedient to require all the pupils, except the one reading, to close their books. In this way the class will be better able to criticise, and the criticism will be more just and valuable. Besides, while the other pupils will all be kept on the alert to listen, the pupil reading will unavoidably endeavor to pronounce correctly, enunciate distinctly, and emphasize naturally. Additional effect will be given to these exercises by requiring the pupils to reproduce, in their own language, the substance of what has been read to them. The principal application of this most important exercise is in the use of supplementary Readers.

11. As silent reading constitutes nearly all the reading

that is of practical use and value to us, this method of reading should be commenced and tested in school. It is, therefore, desirable that exercises in which the class read silently should be given with proper frequency. The teacher can determine the results of the pupils' efforts by appropriate questioning and by calling upon the pupils to tell the whole or a part of the matter thus read.

ORAL LESSONS.

General Suggestions for all Grades.

1. The *leading objects* in this branch of instruction are, first, to cultivate habits of *observation and reflection*, and second, to give *facility in description*, both oral and written. Avoid everything tending to convert these lessons into recitations of set forms of words, however these forms may have been obtained, however well they may be understood by the pupils, and however important the facts thus stated.

2. In the selection of topics, "*familiar objects*," and familiar animals, plants, and minerals take precedence of all others.

It is neither possible nor desirable to attempt to teach all, or even the greater part of the topics that might be classified with the requirements of any grade. No topic should be treated exhaustively, *nor should the topics selected be so* FEW *or so* FREQUENTLY REVIEWED *as to narrow down or suspend the discipline of the observing faculty.* Too many reviews of a topic extinguish the pupil's interest in it, and are worse than a mere waste of time; they are positively injurious. The selection and limitation are left to the good sense of the teacher.

3. The *objective method* of teaching presents two dis-

tinct though intimately related departments: *perceptive teaching*, in which the object, as an acorn or an egg, is directly presented to the pupil's senses; and *conceptive teaching*, in which impressions previously received are recalled, arranged, and utilized, the objects themselves not being presented to the senses during the lesson. An oak, an elephant, or a thunder-storm, would fall under the latter department.

The use of pictures, *models*, or other sensible representations of objects, is an important combination and modification of the two principal methods, and should be often employed.

4. *Definitions* should be very sparingly introduced, and *never* in the first stages of a subject. *If given at all*, they should sum up knowledge already attained. The terms *organic*, *inorganic*, *animal*, *vegetable*, and *mineral*, are prominent among the very few terms requiring definition. Such definitions should be prepared for by a process at once inductive and objective.

5. No fact which the teacher can *readily* lead the pupil to discover or ascertain for himself should be imparted by the teacher. *Important* facts not readily derived from the pupil's own observation must of course be supplied by the teacher. Avoid overloading a topic with details, especially those of technology. As far as the character of the general subject of the grade will allow, no topic should be selected in which the number of *facts to be told* bears a large proportion to those which the pupil may be *led to find out* for himself.

6. *The language used by the pupil must be entirely his own*, excepting, of course, the few indispensable definitions. Even these definitions should form no part of any continuous oral or written statement.

NOTE.—The following exemplifies the pupil's *only* use of definitions: *Teacher*—You said coal is a mineral. What do you mean by *mineral?* You said it is a fossil substance. What do you mean by *fossil?*

7. The *process employed* will present two distinct stages: *First*, the analytical or preparatory, in which the teacher leads the pupil to discover or to remember the properties or peculiarities of an object, or to state any other important facts associated with it. The statements by the pupil will be, of course, in his own words; and the additional statements which the teacher himself may find it necessary to make, will be given in the form of familiar conversation. This stage gives the principal discipline of the powers of observation and reflection.

The points thus considered and the facts thus stated should be written upon the black-board in the briefest possible synoptical form, each one *after* it has been considered. While some such synopsis is *indispensable* to the *teacher* as the first step of *preparation* for giving the lesson, it should never be presented to the *pupil* except by the *gradual* process above indicated. (See *Note-books*, paragraph 9.)

8. The *second* or *review stage* of the process is based upon the results of the *first*, and furnishes the principal discipline of the powers of oral and written statement. The facts already considered should be rearranged, if necessary, into an orderly synopsis upon the black-board, the pupils being called upon to assist in this arrangement. This furnishes a valuable and appropriate discipline of *logical* faculty. Pupils should then be required, in turn, to state what they can recall of each item of the synopsis, then of each group of items, and, lastly, of the whole subject. Then the synopsis may be wholly or in part removed or hidden, and the oral process of review repeated. *As a*

final stage, and before dismissing the subject, an extempore *composition*, first with and then without the aid of the synopsis upon the board, should be written upon the slate by each pupil. (See *Composition*.)

9. *Note-books*.—No one can give an "oral language lesson" properly without special and careful *preparation* for teaching that lesson. To attempt to do otherwise is to fail. A synoptical outline or syllabus of the chief points or items in each lesson should therefore be carefully made ready beforehand; and, in order to economize the time and labor of the teacher, to facilitate the few necessary reviews, and to furnish a proper record of the work that has been done or attempted during the term, these synopses should be *recorded* in a *note-book*, together with such additional memoranda of authorities, illustrations, etc., as the teacher may think expedient. But it is particularly enjoined that these synopses and memoranda shall, as far as possible, consist of words and brief phrases only, merely full enough for their proper use, namely, to assist the memory of the *teacher;* to remind, not to inform.

If, on the other hand, the proposed lesson is written out in *sentences* instead of separate words and phrases, the teacher can scarcely avoid using these sentences, word for word, over and over again in the exercises, and the *note-book* becomes virtually a *text-book*, and a very crude and imperfect one. In such case, no "oral language lesson" is really given; the *oral* responses of the pupils are merely *recitations* of "set forms of words," and the final exercise in writing, instead of being a *composition by the pupil*, is only a memorized composition which has been *written and dictated by the teacher*. In this connection, see particularly the *first paragraph* of these general suggestions.

ORAL LESSONS OF THE EIGHTH GRADE.

The teacher is particularly referred to the preceding general suggestions and to the directions and suggestions given under the First Primary Grade. It is important that special care be taken that the class in the Grammar School Grade does not go over the topics taught before the promotion from the Primary. To this end the record of the promotions from the Primary should contain a list of those topics that were used in the Primary "object lessons." The teacher of the Eighth Grade should have a copy of this list in her note-book.

List of Topics suitable for Eighth Grade.—This list is only *suggestive;* no one will have time to take up even half of these topics: make selections. With the consent of the Principal the teacher may substitute any other topic or topics that may properly be included under "food, clothing, or building materials." *Avoid all minute details of technology.* Do not "review" a topic so often as to destroy the pupil's interest. Avoid frequent repetition of definitions: correct all crudities of language—*do not here dwell upon them*, but note the most important, that they may form a part of the class exercises in correction of errors in speech.

Vegetable Food—*Bread Grains.*—Wheat, rye, oats, barley, maize, buckwheat, rice. All of them seeds. Relation of some to straw. Planted every year. Trace from sowing to bread, but not too minutely. In geographical references use map of the world. Kinds of bread. Flour, grits, cracked wheat; meal, hominy, samp, green corn, corn starch (other starches); misuses of grain in preparing various intoxicating drinks.

Common Esculent Vegetables.—Select chief ones in the general order of their annual production. Tell where city children may see them growing.

Berries, Melons, and Fruits.—Domestic ones first; foreign—oranges, lemons, bananas, pineapples, figs, prunes, raisins, etc. Wine, cider, vinegar.

Sugar.—Cane, beet, maple, sorghum, molasses; other kinds and sources of sugar, in honey, milk, fruits, licorice; glucose or corn sugar.

Beverages.—Tea, coffee, chocolate.

Spices.—Black pepper, white pepper, red pepper, cloves, nutmegs, mace, allspice, cinnamon, ginger; other condiments—mustard, horse-radish, salt, vinegar, catsup, etc.

ANIMAL FOOD.—Flesh of domestic animals—beef, mutton, pork, poultry; of other animals—game, fish, oysters, etc., etc.

Butter, cheese, lard, milk.—Trades and occupations connected with food.

CLOTHING—*Vegetable Origin.*—Muslin, calico, linen, India-rubber, etc.

Animal Origin.—Woolens, silks, leather, furs, etc.

How furs and woolen clothes keep us warm. Trades and occupations connected with clothing.

BUILDING MATERIALS.—Common building stones—kinds of fine building stones—mortar, glass, paints, lumber—metals. Trades and occupations connected with building and building materials.

MISCELLANEOUS.—Matches, paper, soap, charcoal, coal, fire, feathers, glue, ivory, plaster, putty, ink.

Objects—easily procurable.—Small bunches of heads of wheat, rye, barley, ear of corn, sprigs of rice, small bottles or boxes containing various grains, hulled and unhulled rice, bran, unbolted and bolted flour; piece of sugar-cane or of corn-stalk, little boxes of sugar in three or four kinds or forms; coffee, raw and roasted; tea, green and black; cocoa-nuts, almonds, peach-pits, apples, oranges, etc., each in its season; wool, cotton, hemp, flax, silk, and pieces of their fabrics; bits of leather, and of furs of various kinds; pieces of common woods, smoothed to show the grain, etc., etc.; pictures of objects.

These and many others are frequently found in schools. The skilful teacher finds them indispensable.

REFERENCE BOOKS.—Sheldon's Object Lessons; Sheldon's Elementary Instruction; Parker's Talks on Teaching; and, especially, articles in Appleton's, Chambers', Johnson's, and other cyclopædias.

COMPOSITION.

General Suggestions for all Grades.

1. Compositions on the subjects of the oral lessons are specially prescribed for all grades excepting the first.

2. When any topic, such as sugar, nickel, the circulation of the blood, or the indestructibility of matter, has been as fully treated in the conversational lesson and review as may be thought expedient, the exercise in composition should immediately follow. This should be a class exercise on slates. Care should be taken that the pupils do not make them so long as to prevent proper correction.

3. A few pupils should be called upon in turn to read what they have written, and should be led by judicious questioning to detect any important errors in the language used, or in the statement of facts. Under proper restriction, mutual criticism by the members of the class can be made a very profitable exercise.

4. To insure a proper variety of thought and expression it is necessary that the oral lesson which forms the basis of the composition should be so selected as to give a considerable number of interesting points or items. If injuriously frequent repetition and review are avoided, the several pupils will recall different groups of items, and all undue sameness will be prevented. When identical phrases or sentences are frequently found in the exercises of the pupils, they are unquestionable evidence of bad methods both in the oral lessons and in the teaching of composition. No definitions should be found in a composition. Their only proper use is distinctly stated on page 133.

5. Some of the compositions written upon the slates

should be copied by the pupils upon paper. This should be done at least once a month in grades eight to three, and twice a month in the higher grades. As these are to be separately corrected by the teacher and returned to the pupils for rewriting, it is expected that the teacher will so adjust the length of the compositions that their correction will make no excessive demand upon his time. On the other hand, they should not be so brief as to fail to furnish the pupils with sufficient exercise.

6. The pupil should write his name and the date upon each composition. All those of the same date should be fastened together, so that the sequence of packets may show the frequency of the lessons and the general progress of the class. A list of all the subjects that have been used during the term for compositions on the slate should also be kept.

7. Written reviews of the lessons in geography and history are perhaps the very best method of permanently fixing in the memory the facts taught by those studies, and, therefore, should not be omitted: such written reviews, however, should not be classed as compositions.

SPELLING.

General Suggestions for all Grades.

1. The exercises should be both oral and written, but principally written.

2. Two lists of words that are to be studied by the pupils should be kept by the teacher of each class. The first should include only the words selected, as prescribed, from the reading and oral lessons. Care should be taken to avoid the repetition of words that have already been thor-

oughly fixed in the pupil's memory by exercises in previous grades. Words needing review on account of their difficulty should form a part of the second prescribed, or miscellaneous, list kept by the teacher. Both the miscellaneous words selected and those taken from the Reader should be suitable to the age and mental development of the pupils.

3. "Miscellaneous words" will include the ordinary proper names of persons (not the surnames), and common words of the daily life of the household, the shop, and the street.

In the selection of proper names, geographical and personal, special care should be taken to include only such as the pupils may have occasion to use in writing; as Chicago, Brooklyn, and Aaron, and not Tapajos, Pyrrhus, and Richelieu.

4. In writing short sentences from dictation, special attention should be given to words which are similar in sound but are spelled differently. Instances will present themselves, both in the selections from the reading lessons and in the miscellaneous words. Thus *piece* will require to be compared and contrasted with *peace ; principle* with *principal*, etc.

5. The written exercises should be as neat as possible, care being taken to train pupils in habits of orderly arrangement of their work on the slate and on paper.

6. When sentences are given, particular attention should be paid to the ordinary troublesome monosyllables, the proper use of capitals, the sign of the possessive case, the period, the interrogation mark, and the use of the hyphen in a word divided at the end of a line.

MEANING AND USE OF WORDS.

General Suggestions for all Grades.

1. In selecting words for these exercises, two leading purposes should be specially kept in view: (1) To impress or illustrate the particular meaning of the word as used in the lesson; (2) to enlarge and correct the pupil's own vocabulary.

2. Where a word has, in common use, two or more meanings quite diverse, a separate illustration should be required for each; and where several words differently spelled have the same or a similar pronunciation, a separate construction should be required for each in the written exercises.

3. A pupil's vocabulary should be understood to consist of the words that he will use in speaking and writing, and of those words only. Words that are found chiefly in books, and in reference to which an appeal to the dictionary must be made, are of little or no importance so far as the pupils in our schools are concerned. Such words as "through," "chimney," and "apron," which the scholars habitually use correctly in speech, should be spelled; to require a special sentence for their use is a waste of time. "Valetudinarian," "argosy," "asphyxia," "protoplasm," and others, which the pupil may never use in construction, the teacher should carefully avoid. When such words do occur in the reading lesson or elsewhere, for the illustration of the passage the meaning should be given by the teacher, no special memorizing on the part of the pupils being required. The context and the dictionary will do what little remains to be done. To spell such words, or to use them in sentences, is worse than idle.

4. Do not attempt too much. Four or five words a day are enough, if thoroughly taught and carefully reviewed. Of these words the teachers should keep special lists, and class lists should be compared, in order that useless duplication may be avoided. The intelligent use of a word in a sentence constructed by the pupil, is the best test of his knowledge of the meaning of the word. Home exercises in the construction of sentences to illustrate the proper uses of words should never be given. No other exercise is so dependent upon the prompt criticism of the teacher.

5. In the higher grades a few common synonyms, such as *divide* and *separate*, *reflect* and *consider*, etc., if made to form a part of these exercises, will add to their variety and profit.

ARITHMETIC.

Mental Arithmetic.—1. The mental arithmetic should both precede and accompany the written arithmetic. The principal distinction between these two divisions of the subject is, that when the numbers involved are too great or too many to be readily retained in the memory, the slate should be employed as an assistant.

2. The exercises in mental arithmetic should, as far as possible, be of the most practical character. As a rule, examples given should be silently wrought by the class simultaneously, and the results obtained be written upon the slates promptly, and at a given signal. The analysis may then be required of the pupils.

3. The explanatory or analytic statements made by the pupil should be of the simplest and most direct character consistent with clearness, and all unnecessary repetition of

formulæ should be carefully avoided. Where this is not done, the principal effort of the pupil is to recall in due order the set form of words, rather than to form the arithmetical combinations necessary to the solution.

4. Besides simple examples in the four fundamental rules and federal money, very simple operations involving practical applications of the selected tables of money, weight, and measure, should constitute a portion of the exercises in mental arithmetic.

5. In the explanation or analysis of examples, in mental as well as in written arithmetic, the pupils should occasionally be called upon, before solving, to state the question.

6. Mental exercises in arithmetic should be conducted in a spirited manner. They should always have the character of extemporized exercises.

Written Arithmetic.—1. The slates should be kept in the best condition as to cleanness; the figures should be distinctly and neatly made, and be written in lines parallel to the upper edge of the slate. A reasonable allowance should be made for imperfections in the forms of figures in exercises in which rapidity is required; yet, every effort should be made to fix in the pupils habits of care, neatness, and system in all that pertains to the written exercises.

2. Exercises in adding columns of figures should be given with such frequency as may be found necessary to produce and retain accuracy and rapidity.

3. Every form of counting, whether by fingers, dots, marks, or other devices, should be strictly prohibited, and the class should be frequently tested for this special purpose.

4. The pupil should name only the results arising from the additions of the successive figures, avoiding all that

oral or mental repetition of the tables which is known as the "spelling process," and all other unnecessary formulæ.

5. The above remark, in regard to the oral or mental repetition of the tables, applies to all the fundamental rules and their applications. The processes should be reduced to the most concise form practicable.

6. When pupils show an ability to add two or more figures at a time, they should be encouraged to do so in exercises that are wrought out silently.

7. When the divisor is less than 13, the long division process is not to be employed or allowed. Examples with such divisors as 60, 1,200, etc., should be solved by short division.

8. Short practical examples, involving two or more of the rules, should frequently be given, and in such a way as to cultivate the intelligence of the pupil.

9. Examples requiring a very large number of figures for their solution should be avoided, except as far as they may be necessary in order to give practical expertness.

10. Examples should be given to test the pupils' accuracy in writing numbers requiring 0s, and their knowledge of the proper methods when the multiplier or divisor contains 0s.

11. Analogous exercises in federal money should be substituted for those in the simple rules referred to in the preceding sections, as soon as may be found expedient.

12. Exercises should be given to insure facility in reading and writing federal money, and in reducing, by *inspection*, and *without analysis*, dollars, etc., to cents or to mills, and conversely.

13. In all practical examples, instead of *telling* pupils to add, subtract, multiply, or divide, give the question in such

a manner as to oblige them to determine for themselves the method and principle to be employed.

14. No detailed analysis is necessary in addition or subtraction.

15. Give examples of bills of purchase or sale involving several items, and similar to those required in daily life.

16. Exercises in arithmetic are not to be assigned for *home study* except in the First Grade. (See § 155 of the By-Laws, 1883.)

FORMS OF ARITHMETICAL ANALYSIS.

A. (*Fundamental*)—*Multiplication.*
Question.—If 1 yard cost $3, what will 4 yards cost ?
Analysis.—If 1 yard cost $3, 4 yards will cost 4 times $3, or $12.
NOTE 1.—Avoid the too concise form "will cost 4 times 3, or 12."
NOTE 2.—*Question.*—If $1 will buy 3 yards, what will $4 buy ?
Analysis.—Similar to *A*.
B. (*Derived*)—*Division.* (1.)
Question.—If 1 yard cost $3, how many yards may be bought for $12 ?
Analysis.—If 1 yard cost $3, $12 will buy as many yards as $3 are contained times in $12, or 4 yards.
NOTE.—Avoid the too concise form "as many as 3 are contained in 12."
C. (*Derived*)—*Division.* (2.)
Question.—If 4 yards cost $12, what will 1 yard cost ?
Analysis.—If 4 yards cost $12, 1 yard will cost ¼ of $12, or $3.
NOTE.—Avoid the very faulty forms "as much as 4 is contained in $12," or "times in 12," or "4 is contained in 12."
D. (*Derived*)—*Division.* (3.)
Question.—If $4 buy 12 yards, what will $1 buy ?
Analysis.—If $4 buy 12 yards, $1 will buy ¼ of 12 yards, or 3 yards.
COMBINATIONS OF *A*, *B*, *C*, *D*.
C and A. Division and Multiplication.
Question.—If 4 yards cost $12, what will 9 yards cost ?
Analysis.—First by *C* for price of 1 yard, then by *A* for price of 9 yards.
C and B. Division. (2) *and* (1).
Question.—If 4 yards cost $12, how many yards may be bought for $27 ?

Analysis.—First by *C* for price of 1 yard, then by *B* for number of yards.

D and A. Division and Multiplication.

Question.—If $4 buy 12 yards, what will $11 buy?

Analysis.—First by *D* for what $1 will buy, then by *A*, Note 2, for what $11 will buy.

NOTE.—*Avoid set forms of giving questions.*—Vary the order of statement as far as is consistent with perfect clearness. For instance, the "*C and B*" question might have been put thus: Spent $27 for cloth. How many yards did I buy, if $12 bought 3 yards? or, how many yards for $27, if 4 yards cost $3? etc., etc.

TABLES OF MONEY, WEIGHT, ETC.

The teaching of the *Tables of Money, Weight, Measure*, etc., should be restricted to the following:

1. FEDERAL MONEY.—The usual table, its notation, and halves, quarters, and eighths of the dollar. The difference between the full table and money of accounts. Adversely to the use of the terms *shilling* and *penny*.

2. *Length.*—12 in. = 1 ft., 3 ft. = 1 yd., 5½ yds. = 1 rod, 220 yds. = 1 furlong, 8 furlongs, or 1,760 yds., or 5,280 ft. = 1 mile.

3. *Surface.*—144 sq. in. = 1 sq. ft., 9 sq. ft. = 1 sq. yd., 30¼ sq. yds. = 1 sq. rod.

4. *Solidity.*—1,728 cu. in. = 1 cu. ft., 27 cu. ft. = 1 cu. yd., 128 cu. ft. = 1 cord of wood.

5. *Dry Capacity.*—2 pts. = 1 qt., 8 qts. = 1 peck, 4 pecks, or 2,150 cu. in. = 1 bu., 36 bu. = 1 chaldron.

6. *Liquid Capacity.*—4 gills = 1 pt., 2 pts. = 1 qt., 4 qts., or 231 cu. in. = 1 gal.

NOTE.—The dry quart is about one-sixth greater than the liquid quart.

7. *Avoirdupois Weight.*—16 oz. = 1 lb., 100 lbs. = 1 cwt., 2,000 lbs., or 20 cwt. = 1 ton, 2,240 lbs. = 1 long ton, or old ton.

NOTE.—The pound avoirdupois = 7,000 grains troy; the ounce = 437½ grains.

8. *Troy Weight.*—24 grs. = 1 dwt., 20 dwt. = 1 oz., 12 oz. = 1 lb.

NOTE.—The pound troy contains 5,760 grains; the ounce, 480 grains. The pound troy is the standard unit of weight.

Time-table and Calendar.—Explain leap year. Tell time by the clock.

Miscellaneous Table.—Teach *dozen*, *gross*, *score*, *quire*, *ream*.

GENERAL NOTE.—Pupils should be carefully taught the meanings, uses, and simple practical applications of these tables.

GEOGRAPHY.

GENERAL SUGGESTIONS FOR ALL GRADES.

1. It is of the first importance that geography should be so taught and reviewed, as not to leave in the mind of the pupil a mere collection of facts, without mutual relation or dependence. On the contrary, the pupil should, from the first, be taught to consider the *earth* as man's dwelling-place—its *motions* as bringing him the alternation of day and night, and the changes of the seasons—its *land-surface* as the chief theatre of animal and vegetable life—the *ocean* as the world's broad highway, and the exhaustless source of clouds and rains, so necessary to every form of life on the land-surface; its currents as modifying the climate of continents and islands—the great permanent *air-currents* as carrying to the land the moisture from the sea—the *mountains* as its condensers, as well as the chief source of mineral wealth—the *springs* and *rivers*, with their branches, as carrying back again the ever-circulating water of the ocean—and its *cities* and *towns*, not as black dots on a map, in colored patches which he has learned to call countries, perhaps near some crooked black streaks, which he has learned to call rivers, but as the centres of social life and development, the seats of government, and the crowded, busy hives of human industry and intelligence.

When geography is thus taught, it is one of the most interesting, important, and practical of studies; but, if it is taught chiefly as a description, by unvarying formulæ, of rivers, capes, peninsulas, boundaries, etc., supplemented, perhaps, by a precise, verbatim repetition of the descriptive geography, as contained in even the very best text-book, it is one of the dullest and most unprofitable.

2. Globes and maps are indispensable auxiliaries. There is no more common and pernicious error than that of *substituting the text-book for the teacher*, who thus is degraded into a mechanical *hearer of lessons*.

The pupil should be taught to have distinctly before his mind's eye the contour of the country which he may be studying, and its leading physical and political features; to this end, rough sketching of maps (from memory) will be of great assistance.

In all grades there should be exercises in latitude and longitude, and in imaginary travels by land and by sea.

The teacher of geography will find in the daily newspaper a valuable auxiliary, giving information of important events transpiring in countries under consideration.

GEOGRAPHY (EIGHTH GRADE).

In teaching the hemispheres, only such topics should be included as may readily be taught by means of a *blackboard*, a globe, and an outline map of the hemispheres. It is of the greatest importance that the pupil's first impressions be formed from the globe, rather than from the flat and distorted representation of the map.

The following are the principal points in the require-

ments of this grade. The work done should be *tested* in review, by placing the pointer in the hand of the pupil.

The *form of the earth*, its *magnitude*, the *continents* and *grand divisions*, their relative positions, their connecting isthmuses, and a few of their most important projections —the *oceans*, their positions, and principal arms and islands—five or six of the *mountain systems* of America, and a dozen in the rest of the world; three or four well-known *volcanoes*—about a dozen each of the chief *rivers* and *straits*, and about half as many great *lakes*—in a very general way, the location of the most important countries, such as the *United States*, *Great Britain*, *Germany*, *China*, *Japan*, etc., and of a dozen of the most important *cities* of the world. With each of these cities and countries some interesting or important *fact* should be at once associated.

A general notion of *climate*, as affected by distance from the equator, by elevation, and by the great ocean currents —the *motions of the earth*, and the *inclination of its axis* —the *seasons*—*latitude and longitude*—the *zones*, their limits, and a very few of their well-known and characteristic plants and animals—and, in a very general way, the location of the *chief races* of mankind. Only such definitions should be included as are strictly elementary.

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